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THE
EDINBURGH
MEDICAL JOURNAL.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*The Surgical Function of the Omentum.* By KENNETH M'LEOD, A.M., M.D., Surgeon-Major, Bengal Medical Service.

(Read before the Medico-Chirurgical Society of Edinburgh.)

DURING my service in India, my attention has been drawn to a series of cases, in which penetrating wounds of the abdominal wall have been followed by protrusion of the omentum. These cases appear to me to suggest important surgical principles connected with the omentum. I have, accordingly, sought the privilege of briefly laying them before this Society, and, in order to make the matter more complete and better fitted to elicit the experience and observations of its members, I have been at some pains to ascertain, by reference to books and periodicals, what has been recorded in surgical literature on the subject, and have, in addition, made a few observations on the dead body with a view to render our conceptions regarding the anatomy, or rather the topographical anatomy of the organ in question, more precise. I shall, without further prelude, proceed to give a short narrative of my cases, and shall then, in the light of the references and dissections which I have made, discuss the general principles to which they seem to point.

The first case of the series came under my own observation while I was civil surgeon of Jessore. On the 21st of May 1866, a lad, seven years of age, was admitted into the charitable dispensary of that station, with a penetrating wound of the abdomen caused by a spiked bamboo. The wound was situated in the left hypochondrium, just below the cartilages of the ribs. A fleshy gangrenous looking mass, 3 inches long and 1 inch broad, protruded from the wound, which constricted the base of it. The injury had been sustained some days before. The protrusion was solid throughout, painless and irreducible, and there was no disturb-

ance of general health nor any symptom of abdominal distress. Part of the mass was removed by incision, but, hæmorrhage occurring from a vessel of some size, a ligature was placed around the base of the protrusion. The remaining portion of it sloughed off, the wound healed by granulation, no abnormal symptoms of any sort supervened, and the patient absconded on the 7th of June, seventeen days after admission. On dissecting the part of the protrusion which had been removed, it was found to consist of omentum containing small lobulated masses of fat, and matted together by inflammatory adhesion. The membrane could be unravelled and spread out. The case was published by my assistant, Baboo Gopal Chunder Deb, in the August number of the *Indian Medical Gazette*.

In the July number of the same periodical, Surgeon F. Odevaine had published a case of alleged protrusion of the tail of the pancreas through an abdominal wound. The patient, a young man aged eighteen years, of slender make, had received, on the 8th of May, a spear wound in the epigastrium. He came under Surgeon Odevaine's observation on the 24th of May, sixteen days after the injury. A red and white fleshy substance had protruded from the wound. On the patient's admission, it was found to consist of a long pendent fleshy mass emerging through the wound about 2 inches below the ensiform cartilage, measuring 5 inches by $1\frac{1}{2}$, nearly round, but lobulated. No abnormal symptoms, abdominal or otherwise, existed. Surgeon Odevaine concluded that the protrusion was pancreas. It was tied at its base; no bad symptoms followed. The mass separated on the 3d of June, and the patient absconded on the 7th of the same month, thirteen days after the ligature had been placed on the protrusion.

In the September number of the *Gazette*, Surgeon Adam Taylor published a parallel case. A coolie, aged twenty, had stabbed himself midway between the ensiform cartilage and umbilicus, with a *cookree*. A protrusion had taken place, which was found on patient's admission to consist of a thick, firm, solid, dark-red mass, measuring 3 inches by $1\frac{1}{2}$, irregular in shape, surface granular and lacerated in places. The mass was constricted by the wound; a ligature was placed on it on the 29th of July; no bad symptoms existed or arose. The man recovered and was discharged well on the 13th of August, fifteen days after the operation. Surgeon Taylor found the mass to be "solid and glandular, with a fibrous covering dipping into its lobules," and concluded that it was not omentum, and was pancreas.

These three cases, occurring about the same time, and reported in the same journal, raised the questions whether the protrusion observed in them was of the same character, and whether it was possible that the pancreas could issue to the extent described, or indeed could issue at all, through an abdominal wound of the size and situation noted. On these questions I published a short paper

in the September number of the *Gazette*, in which I endeavoured to demonstrate, as the result of special dissections and manipulations on the dead body, that the anatomical position and attachments of the pancreas were such as to render protrusion of the organ through a wound in the anterior wall of the abdomen a physical impossibility. There was no difficulty in obtaining a protrusion of the omentum through wounds made at the sites of those described, and to the extent observed in these three cases; but, even by traction, the tail of the pancreas could not be dislodged and pulled out so as to imitate the appearances described by Surgeons Odevaine and Taylor. I observed, moreover, that in putrid bodies, where the gases contained in the abdominal cavity supplied a strong *vis-a-tergo*, a wound placed above the umbilicus emitted, in the first place, a jet of gas; secondly, omentum; and thirdly, if large enough, intestine. From these considerations a strong opinion was formed that the protrusion in all the cases was omentum, so altered by inflammatory changes as to simulate pancreas, an appearance which Mr Syme states, in his *Principles of Surgery*, the membrane assumes in cases of incarcerated epiplocele.

Subsequent numbers of the *Indian Medical Gazette* contain three additional cases of the same kind. One is by Surgeon-Major W. B. Beatson, civil surgeon of Dacca. The patient, a man aged thirty-six, had sustained, ten days previous to his admission into the Mitford Hospital, a bullet-wound on the left side of the thorax. The exact site is not described, but it is stated that it was plugged by omentum—"a fleshy-looking pale pink mass, about the size of the forefinger, strongly resembling pancreas." It was ligatured and cut off. The man suffered from pleurisy, pericarditis, and pneumonia, and made a protracted recovery, but the wound quickly healed without any untoward symptom. Dr Beatson, in commenting on the case, strongly held that the pancreas, from its relations and connexions, could not be protruded through such a wound, and that the omentum, when congested, inflamed and matted together, may simulate pancreas.

Another good case in point is communicated by Dr Greene, civil medical officer of Serampore, in July 1871. A woman, aged sixty, was gored by a cow five days before admission to hospital. The wound measured 5 inches by 2, and extended from the crest of the left ilium downwards. Omentum protruded, measuring 5 inches long, 3 inches broad, and $1\frac{1}{2}$ inches thick. It was flattened, had the shape of the tongue, looked exactly like a bit of pancreas, was of a brown colour, fetid, and adhered to the lips of the wound. There was no pain or fever, and the bowels acted normally. A ligature was applied. The mass separated, the wound healed kindly, and the old woman made a good recovery. Dr Greene remarks that, had the wound been in the epigastrium, he would have believed that the protruded mass was pancreas.

The third case is from the station of Oraie, in the North-Western Provinces, and occurred in September 1870. It is

reported in the *Indian Medical Gazette* for September 1871. A girl, aged twelve, was gored by a cow four hours before admission into hospital. The wound was in the region of the liver. Two inches of omentum protruded. Emphysema of the right side of the chest existed, and air was observed to escape from the wound. Respiration was reported to be difficult, and the pulse excited. The omental protrusion could not be reduced. It was dressed with carbolic acid. In fourteen days all tenderness and emphysema had disappeared, the mass was ligatured and removed, and the patient made a good recovery, being discharged well in a month and four days from the date of admission.

Two other cases of a similar kind are recorded in a small work entitled *Medico-legal Experience in Bengal*, which I prepared in 1870, founded upon a collection of returns submitted to the office of the Inspector-General of Hospitals. One of these occurred in the station of Goruckpore, in the North-Western Provinces, in 1869. A suicidal abdominal wound, with protrusion of the omentum, resulted in recovery. The other was reported in October 1868 by Surgeon O'Connell Raye, from Nursingpore, in the Central Provinces. A male, aged fifty, stabbed himself with a sword in the belly. There was a penetrating wound of the abdomen to the right of the median line, and $2\frac{1}{2}$ to 3 inches long, above the umbilicus; a piece of semi-gangrenous omentum, 5 inches long or thereabout, about 3 inches wide and $1\frac{1}{2}$ to 2 inches thick, protruded through the wound. The man stated he had stabbed himself three days previously; the piece of omentum was ligatured and removed by a knife, and the wound in the abdomen closed. The patient ran away from hospital a few days afterwards, and was not subsequently heard of.

These eight cases illustrate well the main position which I desire to establish, namely, that, in penetrating wounds of the abdomen of small size, the omentum is prone to protrude, and, protruding, acts as a plug which stops up the wound and prevents the protrusion of the other viscera contained in the cavity. In so doing, the organ subserves a most important surgical purpose. The cases further indicate what all the evidence which I have collected fully supports, that lesions of this description do not seriously imperil life. All the cases, it will be observed, did well. Among fifty similar cases which I have collected from various sources, and tabulated in the sheets before me, there was only one fatal case, and the fatal issue in that one would appear to have arisen mainly from other causes. The list of cases, though a pretty long one, and sufficiently so to show that the event is not an uncommon one, is by no means presented as an exhaustive list, and is subject to the very necessary reservation that it probably represents a higher rate of recoveries than if it contained every case of the sort which has ever occurred; for men are prone, and particularly so in the instance of abdominal injuries, to record cases whose issue has been favourable, leaving others which have ended unfavourably

unrecorded. I have taken the cases as I found them, and as many of them as I have been able to collect,¹ and by way of comment upon them I shall offer a few remarks on the following points:—1st, The circumstances, as regards the site, size, and cause of the wounds, under which the protrusion occurs. 2d, The topographical anatomy of the omentum, its size and position in the abdomen, and the extent to which it covers the abdominal viscera—conditions upon which the event in question must necessarily depend. 3d, The natural history of the occurrence, or what happens when no surgical interference is adopted. 4th, The treatment of the lesion with special reference to the principles of antiseptic surgery, and whether the considerations adduced warrant any modification of existing practice.

I. The situation of the wounds through which omental protrusions took place, is more or less precisely specified in 39 out of the 57 cases. In 17 of the 39, the wound was situated near the umbilicus. In seven cases it was above the level of the umbilicus. Of these, in four the left hypochondrium was the part pierced, in one the left side of the thorax, in one the space between the ninth and tenth ribs, and in one “the region of the liver.” In six cases the sides of the abdomen were wounded. In one the side is not specified, one was on the right side, one on the left, one just above the crest of the right ilium, and two above that of the left. Nine wounds were situated in the hypogastric and inguinal regions—three on the right side and six on the left. It thus appears that, while omental protrusions are liable to take place from any point in the anterior and lateral walls of the abdomen, and even through wounds of the lower chest-wall, they are more liable to occur in the umbilical region, more common below than above the umbilicus, and more frequent on the left than on the right side.

These conclusions are generally confirmed by recorded experience in the case of hernial protrusions; umbilical herniæ most frequently containing omentum, inguinal next, and crural herniæ least. The relation of these facts to the anatomy of the organ will be presently alluded to. I am unable to indicate in what proportion of wounds in the several regions of the abdomen omental protrusions occur. An inquiry of this kind would involve a study of a large number of abdominal wounds of every kind indiscriminately, an induction for which I have neither had the opportunity nor time, but it would obviously be of considerable interest and of some practical importance.

The information regarding the manner in which the wounds were sustained is pretty complete. In 5 cases the point has not been recorded. Of the remaining 52, 24 were wounds of various sorts, 16 stabs, 7 gunshot wounds, and 5 gores by horned animals.

¹ For the majority of these cases I am indebted to the industry of Assistant-Surgeon G. A. Otis, of the U. S. A., who has recorded abstracts of a large number of them in the *Medical and Surgical History of the War of the Rebellion*, a magnificent compilation, full of most valuable material.

Observers are agreed that protrusions of the abdominal viscera are more apt to take place in wounds and stabs than in gunshot injuries, and the statement just made accords with this view. Of the 24 wounds, 6 are described as incised, penetrating, or punctured, 5 were caused by knife, 4 by lance or sword, 3 by sabre or spear, 2 by pieces of glass or crockery, and 1 by the blade of a scissors, a pointed bamboo, a *cookree*, and a spike of iron-railing severally. The size of the wound is rarely described, but probably an inch, or an inch and a half, would be about the average. The extent of protrusion is given in 22 cases,¹ but the data do not lead to any useful conclusion. The length of the mass varied from 1 to 6 inches. Some of the longer protrusions came through the lower abdominal wall, and some of the shorter through wounds of the umbilical region. The amount of the membrane escaping most probably depends upon other circumstances than the mere situation of the wound—on the anatomical condition of the organ, on the size of the wound, and perhaps on the amount of exertion taken after its infliction.

These data refer to wounds of the abdominal parietes; but the conservative property of the omentum, which I am endeavouring to illustrate, is not confined to these. In three of the cases, the diaphragm was probably wounded and plugged, and I can conceive it possible that a punctured wound of the left half of the diaphragm might be stopped up by omentum, though I have not met with a case in which this was demonstrated to have taken place. In cases of phrenic hernia, in which the viscera have found their way into the cavity of the chest through wounds and dilated natural orifices, the omentum has been found along with other organs, and has

¹ SIZE OF OMENTAL PROTRUSIONS:—

Description of Protrusion.	Site of Wound.
Size of an orange,	Side of abdomen.
4 inches long,	Above crest of left ilium.
Size of a small orange,	Near and below umbilicus.
Size of a walnut,	Not stated.
3 inches long,	Left side of abdomen.
6 " "	Below umbilicus.
4 " "	Left iliac region.
3 " "	Between ninth and tenth ribs.
3 " "	Left of umbilicus.
3 " "	Right of umbilicus.
1 " "	Left of umbilicus.
3 " "	Left of hypochondrium.
5 " "	Epigastrium.
3 " "	Above umbilicus.
Size of the forefinger,	Left side of thorax.
5 inches long,	Left iliac region.
2 " "	Region of liver.
5 " "	Right of umbilicus.
2 " "	Below navel.
Size of palm of hand,	Left groin.
6 inches long,	Left iliac region.
6 " "	Above crest of left ilium.

contracted adhesions to the orifice of the aperture.¹ Wounds of the intestines are sometimes plugged by omentum. Dr Gross, in his *System of Surgery*, 5th ed., p. 664, states that, "in some instances of wounds of the intestines, the breach is closed by a piece of omentum, which, projecting into it, fills it up like a tampon. When this occurs, the contiguous serous surfaces become firmly adherent to each other, and that portion of the plug which lies within the bowel, and assists in maintaining its continuity, is eventually absorbed,—a circumstance which leads to the gradual approximation of the lips of the wound, and their ultimate reunion." Poland, in an article "on Contusions of the Abdomen" in vol. iv. of the third series of Guy's Hospital Reports (p. 152) quotes a case by Jobert. A man, aged 22, was injured by the wheel of a carriage passing over his abdomen. This was followed by no uneasiness nor tympanitis. He progressed favourably, and was almost convalescent, when, after being two months in hospital, sudden hæmoptysis took place and death. On post-mortem examination, a rupture of intestine was found, which was filled up by a plug of omentum projecting half an inch into the bowel.

In more extensive solutions of the continuity of the intestinal tube, the omentum has been found, by adhering to the extremities of the injured gut, to prevent extravasation of fæces into the cavity of the peritoneum, and assist materially in restoring the continuity of the tube. Travers, in his classical work on the *Process of Nature in repairing Injuries of the Intestines*,² gives several illustrations of this event. He found that intestinal wounds in dogs were frequently closed up by omentum—an event which Dr Gross remarks (*op. cit.*, p. 665) occurs more frequently in these animals than in man.³ Finally, there is in the *Medical and Surgical History of the War of the Rebellion* (page 171), a most remarkable case in which a bullet made its way into the abdominal cavity, and was held by a pouch of omentum as if by a purse. It thus appears that the omentum fulfils beneficial conservative or curative purposes in other circumstances besides those with which I am more particularly concerned at present.

II. Without entering at any great length on the anatomy of the omentum, there are some points connected with its structure and position which bear so directly upon the subject in hand that they

¹ A case of this kind is related by Dr A. Taylor in Guy's Hospital Reports, vol. iii., for 1838. A case of strangulated hernia through the œsophageal opening of the diaphragm is given in part ii. of the *Medical and Surgical History of the War of the Rebellion*, p. 25, in which part of the great omentum was found in the thorax. See also several cases in Sir Astley Cooper's standard work on *The Anatomy and Surgical Treatment of Abdominal Hernia*.

² Pages 58, 95, 99, 114, 118, 343, 346, 347.

³ The omentum similarly seals up perforated intestinal ulcers; see a very remarkable case related by Travers at page 43 of the work quoted. In No. 8 of the tabulated post-mortem examinations, omental adhesions to the peritoneal aspect of perforating tubercular ulcers were observed.

merit prominent attention. The omentum is usually represented in anatomical plates, such as those of Quain and Sibson, as an apron hanging down from the greater curvature of the stomach, thinly veiling the transverse colon, and below it concealing the small intestines from view, loaded with fat, traversed by large vessels, and ending inferiorly in a crenated, scalloped or fimbriated margin. The sketch which I exhibit, and which was given me by Mr Chiene as a true picture of a normal omentum, bears out this description exactly. But, in reality, the organ varies immensely in its size and character, and in its position in the abdominal cavity. This I have had amply illustrated by the observation of 20 post-mortem examinations in which I was kindly allowed by Dr Wyllie to take notice of the state of the omentum, the appearances in which I have roughly tabulated. Before alluding to this table, I would direct the attention of the Society to the tinted tracings which I exhibit of Braune's sections of frozen bodies.¹ These display very accurately and instructively the topographical anatomy of the normal omentum—its size and position. The sketches are six in number (Nos. I., II., XVI., XVII., XVIII., and XIX. of Braune's plates). Two are vertical sections in the mesial plane, one of a healthy man of 21, and the other of a healthy woman of 25, both of whom had committed suicide by hanging. The remaining four are transverse sections of the abdomen at different levels, the subject being a healthy young man of 22.

It will be observed from these sections² that the omentum forms a complete and substantial layer interposed between the anterior wall of the abdomen and the small intestine below the level of the umbilicus, and, above that point, more thinly covers the transverse colon and its left flexure. It is further apparent that the extent of the organ corresponds generally with the comparatively unprotected part of the abdominal parietes. It is wanting where the cavity is protected by thick walls of bone and muscle. It is also evident that, while the anterior surface is flatly applied to the inside of the anterior wall of the abdomen, the posterior surface applies itself to and fits into the inequalities of the intestinal surface. This circumstance becomes very apparent from an inspection of the front and back of a thick omentum, the former being smooth, flat, and glazed, and the latter uneven and lobulated. The intestines, in their varying states and motions, must present very considerable variations of their general surface, and it would seem as if one use of the omentum were to adapt itself as a yielding surface to these variations; for the cavity of the abdomen is normally fully occupied with its contents, and there is really no such thing as a cavity of the peritoneum. The sections finally show that the omentum extends rather farther to the left than to the right. Now, reverting to the particulars already given regarding

¹ *An Atlas of Topographical Anatomy*, by Wilhelm Braune.

² It has been considered unnecessary to reproduce these sketches.

the situation where omental protrusions are most liable to take place, it is so clear that these tally with the normal anatomy of the organ, that it is unnecessary to dwell on the subject in detail. The protrusions which take place in the left hypochondriac region are dependent on the fact that the omentum is more free and voluminous on the left side, and often hangs down from the fundus of the stomach, having little or no connexion with the colon. Indeed, there is often a supplementary fold, or several of them, in this situation.

The observations detailed in the table which I have constructed, show that the descriptions and representations of the normal omentum, just alluded to, are subject to great modification. The subjects were mostly bed-ridden persons who had died of lingering and often wasting diseases, and it is possible that a prolonged recumbent position may account for the crumpling or tucking up of the omentum observed in so many of them. Still, it is right to indicate briefly what the observed departures from the normal actually were. The organ itself varies greatly in its length and breadth. Measured from the lower border of the transverse colon, its depth may vary in adults, from 2 or 3 inches to a foot, or a foot and a quarter, and, while some omenta cannot by pulling be brought do town within 2 or 3 inches of the symphysis pubis, others can be drawn considerably beyond it. This circumstance would satisfactorily account for the varying length of protrusions, even if other causes of difference were absent. Then the breadth differs, though not so widely, and the points at which the organ commences and ends on the colon. Most frequently the omentum is not symmetrical. It is usually deeper and more voluminous on the left than on the right side, and extends further along the left than the right flexure of the colon. The amount of fat contained in it differs much in different bodies. As age advances the tendency to deposit is greater. A really thick omentum would be a better protection to the hollow organs than a membranous one, and would be less likely to protrude through a small wound. Omenta also vary in the place and degree of adhesion to the transverse colon, and of the adhesion of its component layers to each other, and in the capacity of the omental sac. The distance between the stomach and colon varies, and the mobility of the colon and the thickness of membrane interposed between it and the parietal peritoneum. The colon is often more free on the left side than on the right. Again, the position of the omentum in the abdominal cavity depends on a number of circumstances independently of its anatomy—on age (the omenta of children being relatively scanty and thin); on the size of the liver (enlargement favouring its lower level in the abdomen); on the state of distension of the stomach and colon (dilatation of either shortening it); on the condition of the small intestines (distension tending to push it up); on the existence of fluid in the peritoneal cavity (ascites causing floating

of the intestine and pushing up the omentum); on peritonitis and its consequences; on abdominal tumours and pregnancy.

The lower border of the omentum is most frequently scalloped or fimbriated, but the degree of this condition varies considerably. It almost looks as if the organ were intended, by means of these fimbriae, to present a series of perpetual feelers in the abdomen in constant watch for mischief. This idea is countenanced by the fact, that it is these fimbriae which most frequently contract adhesion to ulcers and tumours, and form by their elongation the omental bands which are so well known and in some cases so inconvenient. I have endeavoured in the table to indicate, by measurements from fixed points, the position of the stomach and transverse colon, and the level to which the omentum hangs in the abdomen. I have also briefly described what viscera were seen in each case on opening the abdomen. Without entering on a detailed analysis, suffice it to state that, in only one case did the lower border of the omentum reach the symphysis pubis. In the rest, the distance of this margin above the symphysis pubis was considerable, as much as 9 inches in two cases and 12 inches in another. The small intestine was, accordingly, in very few cases entirely covered by omentum. It was partially covered in most cases, but entirely uncovered in a considerable minority. The omentum was, in extreme cases, crumpled or tucked up above the level of the umbilicus; but it could, in almost every case, be pulled down to the symphysis pubis, near it or over it.

The practical upshot of all this anatomical detail is, that the condition of the omentum and its position in the abdominal cavity are extremely variable, and that it is impossible to predict what either or both may be in any given case. This fact of variability and its practical consequences are, however, things to be held in memory.

III. With respect to the natural history of omental protrusions, the first point worthy of note is, that they appear always to take place immediately after the injury has occurred. Travers, in the work which I have quoted (note, page 97), alludes to the frequency of omental protrusions being a serious impediment in making experimental observations on wounds of the intestines. The degree of efficacy with which the protrusion acts as a plug may be inferred from a case recorded by Baron Larrey (No. 6 in the table), in which bleeding from the epigastric artery was completely controlled by the omental tumour, on whose reduction the artery bled and had to be tied. An interesting case, illustrating the same point, has been communicated to me by Dr R. Black, of Greenock. A sailor had been stabbed in the epigastrium, and was brought to hospital soon after with an omental protrusion, which was apparently reduced, and the wound stitched. He died next day. Bleeding from the wound had been slight, and none took place after his admission. On dissection, the omentum was found still plugging up the deep part of the wound. The stomach, duodenum,

and mesentery, had been perforated, and a large branch of the mesenteric artery divided. Forty ounces of blood were found in the cavity of the abdomen. The lesson taught by this case is, that, if the omentum can prevent the issue of blood from the abdominal cavity, how much more efficiently can it prevent the exit of the intestine. Though the cases in which the prevention of intestinal hernia by the omentum has been observed have been almost all cases of stab or small wound, it would appear that, even in large wounds, under favourable circumstances, the organ is capable of exercising this function. In Dr Greene's case of gore related above (No. 43 in the table), the wound was a very large one. A still more remarkable case is related by Hennen in his work on military surgery (page 453). It is that of an officer "almost the whole of the anterior part of whose abdominal parietes had been blown off by a shell, with the exception of the peritoneum, though sorely lacerated and deprived of the muscles. Where the umbilicus had been there was a large rent through which the omentum protruded, though not to a great extent, and scarcely above the surface. Spots of the stomach and of the arch of the colon were visible through smaller rents, and, what was remarkable, no part of the intestines protruded through these openings," probably because the omentum, as it were, buttoned them in by its protrusion further down. The efficiency of the omentum as a plug is still further proved by the amount of exertion which patients have taken after sustaining an injury of this sort. In Mr Key's case (No. 4 in the table), the patient walked a quarter of a mile, and in Mr Nunneley's case (No. 33 in the table), three miles, after being wounded; and in the case of an American officer, recorded by Assistant-Surgeon Sternberg (No. 36 in the table), the patient had travelled 100 miles in a cart over a very rough road. What would have happened in these cases, had the protrusion been small intestine in place of omentum, is probably that the whole of the tube would have gradually found its way outside, as occurred in a case of gore in my own experience. The changes which take place if the protrusion is not returned into the abdomen, are as follows:—Inflammation is set up in the protruded mass, which does not appear to extend beyond the neck of the flask or tongue-shaped tumour. Here adhesions form to both lips of the peritoneal wound, and so the occlusion or sealing up of the abdominal cavity is permanently secured. The result, as regards the portion of the tumour lying outside the wound, depends on the degree of constriction to which it is subjected at its neck. If this is very tight, the mass sloughs off; if less so, partial sloughing takes place; and if the constriction is not sufficiently severe to deprive the mass of vitality, the omentum becomes solidly matted together by inflammatory effusion of a plastic kind, resembling, as the cases already cited prove, pancreas; granulations spring up on the surface, which become covered with pus; the tumour gradually wastes away and appears to be retracted within the abdomen; and finally, after a

lapse of about 50 days, the wound contracts and cicatrizes. Surgeon-Major Williamson, in his work on *Military Surgery*, gives an instructive case, in which an opportunity occurred of observing the state of matters five and a half years after a soldier had sustained a penetrating abdominal wound. The man was shot through the abdomen at the battle of Ferozeshah, on the 22d of December 1845. Very slight symptoms followed, so that it was supposed that the ball had coursed round the cavity and had not penetrated. He mentioned having passed some blood in his stools after receiving his wound. The ball had escaped near the spine, having entered in front. He recovered slowly but perfectly, except that he continued subject to bowel complaints. He finally died of cholera on the 13th of May 1851. The details of the post-mortem examination, as recorded by Dr Taylor, are as follows:—"Cicatrix of a gunshot wound in the left linea semilunaris, about four inches above the crest of the ilium, and on the same plane posteriorly, another cicatrix an inch to the left of the spine. Omentum firmly adherent to the internal surface of anterior cicatrix, and gathered into a fold or knot." The intestines were not adherent. The report goes on to describe certain interesting appearances in the intestines, which do not concern us here.¹ The case is a typical illustration of the conservative or protective function fulfilled by an unprotruded omentum. I have tabulated four cases in which omental protrusions were left to themselves. The first formed the subject of a memoir, presented by M. Hippolite Larrey to the Royal Academy of Medicine of Paris in 1845. Patient had sustained a penetrating wound of the abdomen, from which an omental protrusion had taken place. This could not be returned. It was covered with a poultice. Considerable inflammation followed for the first day or two. On the 4th, a suppurating surface was established; on the 10th, the protrusion began to be withdrawn; and, on the 36th, it was reduced to the level of the skin. In 46 days the patient was cured. The case is quoted by Guthrie in his excellent lectures on *Wounds and Injuries of the Abdomen*, where he gives a parallel case of his own. A Spanish soldier had been wounded by a musket-ball passing through the abdomen from side to side. He was seen four days after the injury. A mass of omentum as large as an orange protruded from one of the orifices. "The protruded omentum gradually diminished in size, and was at last drawn into the wound in the abdomen and covered by granulations." The third case by Baron Larrey is precisely similar. The fourth is related at length by Mr Aston Key in the first volume of Guy's Hospital Reports (for 1836). The tumour partly sloughed off and the remainder gradually wasted away and disappeared. Complete recovery took place in 42 days. Irritation of the stomach (vomiting) was a prominent symptom in this case. The omentum was found to be quite insensible, and no

¹ This case is quoted by Macleod in his work on *Surgery of the Crimean War*, from which I have taken the description of it.

pain was felt when the protrusion was pricked or squeezed. As a natural consequence of omental protrusion, dragging down of the viscera has been observed, as in some cases of hernia related by Travers.¹ Such a condition might occasion intestinal disturbance, and several authors allude to uneasy feelings caused by this dragging. Indeed, Ravaton goes so far as to aver that omental lesions may be diagnosed by the peculiar sensations experienced by the patient. These sensations most probably depend on the traction to which the other viscera are subjected, and this traction and its effects are worthy of being borne in mind in the management of such cases.

IV. The treatment of omental protrusions depends mainly upon the time which has elapsed since the protrusion took place; but the nature and position of the wound, the amount and condition of the protruded mass, the degree of constriction to which it is subjected, and the symptoms which have arisen, are also points of importance. The cases practically arrange themselves into seven classes.

1. When the omentum is sound, the injury recent, and the protrusion reducible.

2. When the omentum is sound, the injury recent, but the protrusion cannot be reduced by manipulation.

3. When the injury is recent but the omentum is much bruised, lacerated, or very ragged in consequence.

4. When the omentum is, in a comparatively recent case, congested or strangulated.

5. When the omentum has become inflamed and matted, its neck being adherent to the lips of the peritoneal wound.

6. When the protruded mass has undergone suppuration.

7. When the tumour has become gangrenous in part or in whole.

On each of these heads I shall offer a few remarks; but, before doing so, I would point out that, in the table which I have drawn up, I have arranged the 57 cases in four categories, according to the treatment which has been adopted, namely—A, cases in which nothing was done; B, cases in which the protrusion was reduced; C, cases in which it was cut off; and D, cases in which it was ligatured.

1. In recent and reducible cases where the omentum is uninjured, surgical authorities² are agreed that the hernia should be reduced after washing, if necessary, and the wound carefully stitched up. Guthrie (*op. cit.*, page 12) recommends that the omentum when reduced should be left between the edges of the peritoneal wound, “in order,” to quote his words, “that by its retention it may more readily adhere to these edges, and thus form a more certain barrier against the extension of inflammation than is likely to take place by some accidental contact, when moving at liberty in the cavity of the abdomen, however closely it may be

¹ *Op. cit.*, page 363.

² Boyer, Ravaton, Larrey, Samuel Cooper, Guthrie, Ballingall, Syme, Chelius, Gross, Hamilton, Erichsen, Pollock, Otis, Bryant.

supposed to be applied to the inner surface of its paries." Erichsen lays down a similar instruction. 'Dupuytren is the only surgical authority of eminence who disapproved of reduction, because, he urged, the handling necessary in applying the taxis might inflame the organ. *A fortiori*, he discountenanced reduction under any other circumstances, fearing hernia from enlarging the wound, bleeding from retrenching the organ, and constriction from ligature. There can be no doubt that leaving the protrusion as it is, even when recent and reducible, is a perfectly safe and successful practice. Assistant-Surgeon J. S. Billings of the United States Army, in a report on the treatment of diseases and injuries in the army of the Potomac in 1864 (*Med. and Surg. Hist. of the War of the Rebellion*, part i. page 202), writes :—"When the protrusion consists of a small knuckle of omentum only, some medical officers prefer to leave it *in situ* to act as a natural plug for the wound." As a field practice this was safe and convenient, but the cure is tedious in such cases, and recorded cases show that reduction is devoid of danger, and procures a speedier recovery. The cases which I have tabulated amply prove this. The only risk of the procedure is that of introducing septic matters into the peritoneal cavity; and, to avoid this, I would thoroughly wash the hernia with an antiseptic solution (warmed) before putting it back, and treat the abdominal wound strictly according to the principles of antiseptic surgery. Ablation and ligature of the mass, though both plans have been practised without injury, are unnecessary, and cases have been recorded in which death has been the apparent result of cutting off or tying recent protrusions. The very strong objection urged against these practices by Ravaton and Dupuytren are still entitled to respect.

2. As regards recent irreducible cases, authorities are not so unanimous. The obstacle to reduction is the constriction caused by the wound, and the practical question comes to be, Should the wound be enlarged to permit of reduction or not? Reduction is not, it will be observed, so imperatively necessary as in the case of the hollow viscera, or even of the other solid organs. Boyer, Erichsen, and Pollock ("On Injuries of the Abdomen," in Holmes's *System of Surgery*) reply in the affirmative, and Robert, Dupuytren, Larrey, Chelius, and Bryant, in the negative. Guthrie points out that the obstacle to reduction is in the wound of the skin and aponeurosis, and not in that of the peritoneum, and he advises enlargement of the former, proceeding afterwards as in reducible cases. The risk of enlarging the wound is, of course, hernia. Against this may be placed the painful symptoms that may be caused by strangulation, for whose relief some surgeons counsel enlargement of the wound without subsequent reduction. Again, some authors make the size and amount of the protruded mass a ground of difference in dealing with it. A small protrusion does not take so long to disappear when left to itself as a large one, and in the latter there is greater risk of a bit of intestine being

enclosed, or of uneasy sensations or functional disturbance of stomach or bowels being caused by dragging. Pollock would remove by double ligature and excision a small protrusion, but would widen the wound and reduce a large one. Chelius, following Larrey, would leave a small hernia alone, but return a large one if possible. Hamilton (Dr F. H.) would excise a very large protrusion, tying the vessels if they bled; and Cooper (Samuel) would free, and, if possible, reduce a large hernia where stomach symptoms existed. Although enlargement of the wound and reduction have been practised with success, I should incline in this class of cases to leave the protrusion alone, unless suspicion of a piece of bowel being included existed, or uneasy symptoms appeared, in which circumstances relief of the constriction or enlargement of the wound and reduction might be advisable. Guthrie's plan seems a sensible one, and he gives cases demonstrating its success. Both ablation and ligature, separately and combined, have been put in practice, and have resulted in cure; but Bryant's advice to wait for two weeks until adhesions shall have formed at the neck of the tumour, and then remove by single or double ligature or excision, or by both methods combined, commends itself as judicious and consistent with what we know of the pathology of this condition. If reduction is practised, antiseptic precautions are certainly indicated; and, even if Bryant's plan be followed, their adoption would, to say the least, do no harm. A prolonged and violent taxis would in any case be obviously improper and unsafe.

3. When the omentum is bruised or lacerated, its reduction in this condition would obviously be wrong, and the question remains whether it should be left as it is, the torn and bruised parts removed, and the rest reduced, or the whole excised with or without previous ligature, or simply ligatured at the level of the wound. Each plan has been practised successfully. Chelius, Bryant, and Gross advise ablation, bleeding vessels being secured if necessary. Dupuytren, Guthrie, Hamilton, and Otis recommend its being left alone, and Pollock advises removal after single ligature of the base, or transfixion and double ligature. Deliberate strangulation by string of a recent omental protrusion is not good practice. Pipelet gives instances of mischief caused by it; and Travers and Sir Astley Cooper, both high authorities, disapprove of the practice in the closely analogous case of epiplocele. Ablation by knife, though a sounder practice, seems unnecessary; and, on the whole, I should either, with Larrey, Guthrie, and others, leave the case to nature, clipping away ragged pieces if needful, or, with Bryant, wait till adhesions had formed, and then ligature at the neck, and excise the mass beyond under the antiseptic system.

4. In a congested or strangulated recent protrusion, the alternatives are—(a) to leave the case to nature; (b) to relieve the stricture; or (c) to excise or ligature. Returning a congested or semi-strangulated omentum into the abdominal cavity is out of the question. Relieving the constriction by enlarging the wound

would only be necessary or advisable when symptoms existed demanding such relief. Incising the congested mass might give ease, and perhaps prevent extension of inflammation inwards. The same objection obtains to ablation or deligation, as in any other recent case where adhesions have not so far placed the mass outside the peritoneum. Syme, in condemning the practice of ligature in the parallel case of hernia, pithily remarks, that it would amount to relieving the patient from the effects of one stricture and exposing him to those of another still tighter. Relief of the stricture or removal after adhesion had formed, are, I would submit, the only justifiable modes of interference in such cases.

5. When the protrusion has become pancreatised (so to speak) by inflammation, and adhesions have united its layers together, and its neck to the lips of the wound, it may either be left alone or removed. If left alone the case is more tedious. Removal by knife or string, or both, are safe enough, but should be done antiseptically. The mass has now become practically extraperitoneal, and interference is not so dangerous as in recent cases. Perhaps, if it is decided to remove the mass, the knife or ecraseur is preferable to the ligature, bleeding vessels being of course carefully secured.

5. When suppuration has taken place in the hernial mass, incision is obviously indicated. The case should, in fact, be treated as any other abscess, or, if adhesions have formed and the matter is outside of the abdominal cavity, removal of the whole mass may be practised.

6. When the protrusion is gangrenous in part or in whole, if adhesions have cut it off from the abdominal cavity, it may be either left to nature, or removed by knife, ecraseur, or ligature. If there is any doubt as to adhesions having formed, the propriety of interference is more than doubtful. If removal is practised, antiseptic precautions should be adopted.

From all the evidence and considerations which I have now adduced, I think that the protective function of the omentum in penetrating abdominal wounds, and to a more limited extent in intestinal lesions, has been fully established. I would submit that, in cases of wounds perforating the abdominal parietes, surgeons would act wisely in not interfering too rashly with the beneficent operation of this organ, or even in endeavouring, if practicable, to interpose between the hollow viscera and the parietal wound, that organ which normally covers them, and seems intended to shield them from the baneful effects of extrusion or inflammation. The mortality of penetrating abdominal wounds is so great that any measure giving promise of reducing it is worthy of very special attention. The subject of omental protrusions has attracted more notice in France and America than in this country, and the fact that it is entirely omitted in many British text-books of surgery, would, if the interest of the matter did not of itself do so, justify me in entering into it in such detail.

APPENDIX NO. I.—TABLE OF CASES.

A.—Cases in which nothing was done.

No.	Sex.	Age	Nature of Injury.	Site and Character of Wound.	Protrusion.	Treatment.	Result.	Reporter.	Reference.
1	?	?	Penetrating wound.	Abdomen.	Omentum.	Poulticed.	Protrusion gradually drawn into abdomen. Patient recovered in 46 days.	H. Larrey.	Guthrie on Wounds and Injuries of the Abdomen, p. 13.
2	M.	Ad.	Bullet wound.	Side of abdomen.	Omentum, size of an orange, 4 days out.	Left alone.	The protruded omentum gradually diminished in size, and was at last drawn into the wound in the abdomen and covered with granulations.	Guthrie.	Do., p. 13.
3	M.	26	Sabre wound.	Not stated.	Omentum formed a tumour.	Left alone.	Gradually diminished in size, and returned within abdomen.	Larrey.	Mém. de Chir. Mil. et Camp., 1817, t. iv p. 436.
4	M.	18	Stab. Walked 1 mile immediately after with little difficulty.	Left side, immediately above the centre of the crest of the ilium.	4 inches of omentum.	Left alone.	Part sloughed off in 8 days. Tumour gradually wasted and disappeared. Recovered in 42 days.	Key.	Guy's Hospital Reports, vol. i. 1836, p. 580.

B.—Cases in which the Protrusion was reduced.

No.	Sex.	Age	Nature of Injury.	Site and Character of Wound.	Protrusion.	Treatment.	Result.	Reporter.	Reference.
5	M.	17	Stab, 5½ inches long.	Immediately above umbilicus.	Omentum.	Protrusion reduced, left lying against wound of peritoneum. Wound sutured.	Recovered in a week.	Guthrie.	Wounds and Injuries of the Abdomen, p. 12.
6	M.	Ad.	Lance wound.	Right side and lower part of belly.	Omentum.	Reduced; on which epigastric artery bled freely and was ligatured. Wound sutured.	Recovered.	Do.	Do., p. 13.

B.—Cases in which the *Protrusion* was reduced—continued.

No.	Sex.	Age.	Nature of Injury.	Site and Character of Wound.	Protrusion.	Treatment.	Result.	Reporter.	Reference.
7	M.	Ad.	Stab.	Right side of abdomen, near and below umbilicus.	Portion of omentum, size of a small orange.	Reduced after enlarging wound of skin and aponeurosis.	Recovered.	Guthrie.	Wounds and Injuries of the Abdomen, p. 12.
8	M.	Ad.	Not stated.	Not stated.	Omentum.	"Gradually turned."	Recovered in a few months.	Larrey.	Mem. de Chir. Mil. et Camp., 1817, t. iv. p. 278.
9	?	?	Not stated.	Size of a small crow-quill.	Omentum, size of a walnut.	Reduced.	Recovered.	Syme.	Principles of Surgery. 5th ed. p. 327.
10	M.	Ad.	Shot.	Abdomen.	Omentum protruded from both wounds.	Reduced.	Recovered.	Bandens.	Clin. des Plaies d'Armes à feu, 1836.
11	M.	5	Fell on a glass shade.	Abdomen.	Omentum and large intestine.	Reduced.	Recovered.	Fayrer.	Clinical and Pathological Observations, p. 576.
12	M.	21	Punctured wound.	Right side of abdomen.	Omentum.	Wound enlarged and omentum returned.	Recovered.	Earle.	London Medical Gazette, 1829, vol. iii. p. 27.
13	M.	10	Fell on a broken wash-hand basin.	Abdominal wall.	Greater part of small intestine, transverse colon and omentum.	Reduced.	Recovered in 25 days.	Blacklock.	Monthly Journ. of Med. Sci., 1852, vol. xv. p. 32.
14	M.	41	Stab.	Left umbilical region.	Omentum.	Returned.	Recovered.	Love.	Med. and Surg. Reporter, 1860, vol. iv. p. 271.
15	M.	23	Stab.	Left side of abdomen.	3 inches of omentum.	Returned.	Recovered in 3 weeks.	Hockford.	Lancet, 1860, vol. ii. p. 120.
16	M.	Ad.	Stab.	Below umbilicus.	6 inches of omentum.	Returned.	Rapid recovery.	Dillon.	Med. and Surg. Reporter, 1871, vol. xxiv. p. 382.
17	M.	Ad.	Bullet wound.	Abdomen.	Stomach, transverse colon and omentum.	Returned.	Recovered.	Lépine.	Bulletin de l'Acad. Royal de Med., 1813-44, t. ix. p. 146.

B.—Cases in which the *Protrusion* was reduced—continued.

No.	Sex.	Age	Nature of Injury.	Site and Character of Wound.	Protrusion.	Treatment.	Result.	Reporter.	Reference.
18	M.	24	Wound.	3 or 4 inches to right of umbilicus.	Omentum.	Returned.	Recovered in 2 weeks.	Cheesman.	New York Journ. of Med., 1841, vol. iv. p. 117.
19	M.	16	Gore by horn of cow.	2 inches below umbilicus.	2 feet of ileum and lower border of omentum.	Returned.	Recovered.	Crawford.	Med. and Surg. Reporter, 1870, vol. xxviii. p. 525.
20	?	?	Incised wound.	?	Intestine and omentum.	Replaced and wound sewn up.	Recovered.	Assist. Surg. E. A. Koerber.	Circ. 3, S.G.O. 1871, Case 316 p. 95.
21	M.	Ad.	Accidental wound by a knife.	By the side of the umbilicus.	Omentum.	Returned by means of a bougie.	Patient recovered without a bad symptom.	Poland.	Guy's Hospital Reports, vol. iv, second series, p. 72.

C.—Cases in which the *Protrusion* was cut off.

22	M.	Ad.	Stab with a knife.	Left side of abdomen.	Omentum.	Cut off without ligature.	Recovered in 2 months.	Forestus.	Obs. et Cur. Chir. Francofurti, 1611, lib. vi. obs. 7, p. 13.
23	M.	50	Stab.	Left hypogastrium.	Omentum.	Cut off without ligature.	Recovered.	Richier.	Eph. Nat. Cur. 2d Dec. ann. vi. 1657, obs. 198, p. 235.
24	M.	Ad.	Sabre wound.	Right inguinal region.	Omentum.	Protrusion extripated.	Recovered in 6 weeks.	Larrey.	Mém. de Chir. Mil. et Camp., 1812, t. iii. p. 261.
25	M.	30	Blade of a scissors.	2 in. above ant. sup. sp. pro. of left ilium.	4 inches of omentum.	Cut off; arteries tied.	Recovered in 14 days.	Ackerley.	Obs. on Wounds of the Abd., Lond. Med. Gaz., 1837, vol. xx. p. 549.
26	M.	15	Stab.	Abdomen.	Large piece of omentum.	Cut off 2 hours after injury.	Recovered in 4 weeks.	Homborg.	Richter's Chir. Bibliothek, Göttingen, 1779, p. 152.
27	M.	14	Stab.	Between 9th and 10th ribs.	3 inches of omentum—ragged piece.	Cut off.	Wound healed in 10 days.	Coates.	Med. Gaz., N. S. vol. v. 1847, p. 933.
28	M.	30	Suicidal wound.	Abdomen.	The man seized the protruding omentum and cut off a portion measuring 144 square inches.	Cut off.	Recovered in 4 weeks.	Gushee.	Boston Med. & Surg. Jour., 1847, vol. xxxv. p. 80.

C.—Cases in which the *Protrusion* was *cut off*—continued.

No.	Sex.	Age	Nature of Injury.	Site and Character of wound.	Protrusion.	Treatment.	Result.	Reporter.	Reference.
29	F.	30	Gore.	2 inches above and to right of umbilicus.	Bowels, stomach, and lacerated omentum.	Bowels reduced, and omentum removed.	Recovered in less than 3 months.	Colegrove.	Boston Med. & Surg. Jour., 1839, p. 249.
30	?	?	Stab.	Not stated.	Torn and bruised omentum.	Cut off.	Recovered.	Willard, Garretson.	Med. & Surg. Reporter, 1870, vol. xxiii, p. 281.
31	M.	23	Stab.	Above and a little to left of umbilicus.	Portion of omentum much lacerated.	Lacerated parts clipped off—one being 12×4 in.	Recovered in 2 weeks.	I Howe.	American Med. & Surg. Jour., Aug. 1855, vol. vii, p. 331.
32	M.	?	Shot.	Not stated.	Omentum.	Removed.	Recovered.	Baudens.	Clin. des Plaies d'Armes à feu, 1836, p. 346.
33	M.	Ad.	Stab by clasp-knife.	Under cartilage of 7th rib, left side.	Protrusion of omentum immediately, walked 3 miles after it.	Removed.	In a fortnight able to walk 3 miles, and was well in less than a month.	Nunneley.	Med. Times & Gaz., 1860, vol. i, p. 432.
34	M.	12	Gored by a bull.	Not stated.	10 inches of colon and a portion of lacerated omentum.	Shreds of omentum clipped off, and viscera returned.	Recovered.	Bertolet.	Med. Examiner, 1851, vol. iii, N. S. p. 489.
35	M.	17	Knife.	3 inches to left of umbilicus.	3 inches of omentum.	Cut off.	Recovered in 3 weeks.	Surg. J. J. Wright.	Med. & Surg. Hist. of the War of the Rebellion, part ii, p. 33.
36	M.	Ad.	Bullet.	Left hypochondrium.	Omentum—after 3 days' rough journey of 100 miles.	Adhered to orifice. Removed by wire ceraseur.	Recovered. Specimen weighed 3 oz.	Assist.-surgeon Sternberg.	Circ. 3, 1871, S. G's O., U.S.A., p. 250.
37	?	4	?	Above and to the right of umbilicus.	6 inches of omentum.	Cut off.	Did well in 4 days.	Guthrie.	On Wounds and Injuries of the Abdomen, p. 13.
38	F.	9	Penetrating wound.	2 inches to left of umbilicus.	1 inch of omentum.	Cut off. Bled, leeches blistered, cal. and op.	Died in 3 days. Pleurisy, right side. Slight peritonitis, omentum plugged wound.	Key.	Guy's Hospital Reports, N. S. vol. ii, 1844, p. 475.

D.—Cases in which the *Protrusion* was *ligatured*.

No.	Sex.	Age	Nature of Injury.	Site and Character of Wound.	Protrusion.	Treatment.	Result.	Reporter.	Reference.
39	M.	7	Penetrating wound by a pointed bamboo.	Left hypochondrium, below cartilage of ribs.	A fleshy mass, 3 in. broad by 1 in. long.	Ligatured at base.	Protrusion sloughed off; wound granulated. Patient recovered.	Baboo Gopal Chundee Deb.	Indian Medical Gazette, August 1866.
40	M.	18	Spear wound, 16 days before admission.	Epigastrium.	A fleshy mass 5 in. \times 1½ in.	Ligatured at base.	Protrusion sloughed off. Patient absconded.	Surgeon F. Odevaïne.	Do., July 1866.
41	M.	20	Stab by a cookree.	Midway between ensiform cartilage and umbilicus.	Solid mass, 3 in. \times 1½.	Ligatured at base.	Recovered in 16 days.	Surgeon A. Taylor.	Do., September 1866.
42	M.	36	Bullet wound, 10 days before admission.	Left side of the thorax.	A fleshy mass the size of the fore-finger.	Ligatured and cut off.	The wound healed quickly. Patient recovered.	Surgeon-Major W. B. Beatson.	Do.
43	F.	60	Gored by a cow, 5 days before admission.	In front of crest of left ilium — 5 in. \times 2 in.	Tongue-shaped mass, 5 in. \times 1½.	Ligatured at base.	Protrusion separated and wound healed quickly.	Dr. Greene.	Do.
44	F.	12	Gored by a cow, 4 hours before admission.	The region of the liver.	2 in. of omentum.	Ligatured and removed after 14 days.	Discharged well in 1 month and 4 days.		Do., September 1871.
45	M.	50	Stab with a sword, 3 days before admission.	Above and to right of umbilicus, 2½ in. long.	Semi - gangrenous omentum, 5 \times 3 \times 1½ in.	Ligatured and removed.	Patient absconded in a few days.	Surgeon D. O'C. Rave.	Medico-Legal Experience in Bengal, by K. M'Leod, p. 60.
46	M.	?	Sword wound.	Not stated.	Almost the whole of the omentum.	Ligatured and removed.	Sanatus est cito.	Galenus.	Omnia que extant Froben, 1567, t. i. lib. iv. 1244.—"de usu partium."
47	M.	Ad.	Stab.	1½ in. below navel.	2 in. of omentum.	Ligatured and cut off.	Recovered in a few weeks.	Neuman.	Am. Med. Intelligence, 1841, p. 164.
48	F.	21	Stab.	Left groin.	Omentum, size of palm of hand.	Double ligature and ablation.	Recovered in 6 weeks.	Hewson.	Med. Examiner, 1857, vol. vii. p. 567.

D.—Cases in which the *Protrusion* was *ligatured*—continued.

No.	Sex.	Age	Nature of Injury.	Site and Character of Wound.	Protrusion.	Treatment.	Result.	Reporter.	Reference.
49	M.	Ad.	Stab.	Left iliac region, $1\frac{1}{2}$ in. above ant. sup. sp. pro.	6 in. of omentum severely lacerated.	Ligatured and cut off.	Recovered in 1 month.	Millner.	New Orleans Journ. of Med., 1869, vol. xxii. p. 177.
50	M.	10	Fell on an iron railing.	Not stated.	A piece of omentum considerably lacerated.	Ligatured and cut off.	Recovered.	Klonan.	Phil. Med. Times, 1872, vol. iii. No. 55, p. 401.
51	?	?	Knife wound.	Left hypochondrium.	Omentum.	6 inches ligatured and removed.	Recovered in 40 days.	Gibbes.	Am. Journ. of Med. Sci., 1873, vol. cxxix. p. 290.
52	F.	31	Sword wound.	Hypogastric region, right side.	Omentum and 7 in. of ileum.	Ileum returned. Omentum ligatured and removed.	Wound healed. Woman died subsequently of diarrhoea.	Saviard.	Nouveau Recueil d' Observ. Chir., Paris, 1702, p. 102.
53	M.	Ad.	Cut with a hunting knife.	Umbilical region.	Omentum.	Ligatured.	Separated in a few days; wound healed. Patient recovered.	Ravaton.	Chirurgie d' Armie. Paris, 1768, p. 497.
54	M.	27	Stab.	Left iliac region, $1\frac{1}{2}$ in. above and internal to ant. sup. sp. process.	Omentum.	Ligatured.	Separated in a few days; wound healed in 3 weeks.	Birkett.	Lancet, 1867, vol. ii. p. 9.
55	M.	19	Incised wound.	Abdomen.	Omentum.	Ligatured and poulticed.	Protrusion sloughed off and wound healed.	Surgeon R. T. Stratton.	Medical and Surgical History of the War of the Rebellion, part ii. p. 33.
56	?	?	?	Abdomen.	Omentum.	Ligatured on 5th day.	Ligature separated in 3 days; discharged in 12.	Hargrave.	Guthrie on Wounds and Injuries of the Abdomen, p. 13.
57	M.	32	Shot wound.	1 in. above crest of right ilium.	About 6 inches of omentum.	Tied and replaced.	Ligature came away in 6 days. Recovered.	Assist.-Surg. W. A. Bradley.	Med. and Surg. Hist. of the War of the Rebellion, part ii. p. 475.

APPENDIX No. II.

Table showing the State and Position of the Omentum in 20 postmortem Examinations.

No.	Sex.	Age.	Podily Condition.	Disease Causing Death.	Distance of Lower Border of Stomach from Xiphoid Cartilage.	Distance of Lower Border of Transverse Colon from Umbilicus.	Distance of Lower Border of Omentum from Symphysis Pubis.	Condition of Omentum.	Viscera Exposed by Reflection of Anterior Wall of Abdomen.
1	F.	57	Fat. Anasarcons.	Cirrhosis. Kidneydisease.				7½ in. deep, ½ in. thick; reached down to symph. pubis on being stretched.	Liver and stomach superiorly. Colon on each side. Small intestine entirely concealed by omentum.
2	M.	21	Extremely emaciated.	Phthisis pulmonalis.				3 inches deep. Membranous.	Small intestine entirely uncovered.
3	M.	43	Pretty well nourished.	Cancer of rectum.				Slightly loaded with fat.	Small intestine entirely uncovered below level of umbilicus.
4	M.	46	Early nourished.	Disease of heart and kidneys.	8½ in. below x. c.	3 in. below umb.	4 in. above s. p.	Membranous. Could be drawn down to symph. pubis.	Liver and stomach superiorly. Transverse colon visible below them. One coil of small intestine seen below lower border of omentum.
5	F.	45	Emaciated.	Phthisis pulmonalis.	7 in. below x. c.	Level of umb.	1 in. above s. p.	7 in. deep. Could be drawn down to symph. pubis. Crumpled up to right, and at middle line.	Liver seen superiorly. Stomach not visible. Transverse colon seen at level of umbilicus. Small intestine concealed by omentum.
6	M.	50	Emaciated.	Phthisis pulmonalis.	6 in. below x. c.	½ in. below umb.	4½ in. above s. p.	Contained very little fat. Crumpled up.	Liver and stomach superiorly. Band of omentum below them, and several folds of small intestine below it.
7	M.	50	Emaciated.	Aortic aneurism.	4½ in. below x. c.	½ in. below umb.	Reaches to s. p.	Membranous. Could be pulled down below symph. pubis.	Liver and stomach superiorly. Transverse colon below them. Small intestine concealed by omentum.
8	M.	40	Extremely emaciated.	Phthisis pulmonalis, perforating tubercular ulcer, peritonitis.	2 in. below x. c.	2 in. above umb.	3½ in. above s. p.	Slightly loaded with fat. Could be pulled down below symph. pubis. Bands adherent to outside of tubercular ulcers.	Liver and stomach superiorly. Latter contracted. Transverse colon partially concealed, and small intestine entirely so by omentum.
9	M.	30	Emaciated.	Typhoid fever, perforating intestinal ulcer, peritonitis.	1 in. below x. c.	2 in. above umb.	4 in. above s. p.	Membranous. Very little fat. Adherent to surface of small intestines by peritonitis.	Liver and stomach superiorly. Small intestine seen on right side; concealed on left by omentum.
10	M.	30	Emaciated. Anasrea.	Disease of heart and kidneys.	5 in. below x. c.	½ in. below umb.	5 in. above s. p.	4 inches deep. Membranous. Adherent to lower border of liver. Crumpled up. Capable of being pulled down to half-way between umbilicus and symph. pubis.	Liver and dilated stomach visible superiorly. Lower half of transverse colon and whole of small intestine uncovered.

Table showing the State and Position of the Omentum in 20 postmortem Examinations—continued.

No.	Sex.	Age	Bodily Condition.	Disease causing Death.	Distance of Lower Border of Stomach from Xiphoid Cartilage.	Distance of Lower Border of Transverse Colon from Umbilicus.	Distance of Lower Border of Omentum from Symphysis Pubis.	Condition of Omentum.	Viscera Exposed by Reflection of Anterior Wall of Abdomen.
11	M.	51	Emaciated. Anasarous.	Disease of heart and kidneys.	6 in. below x. c.	Level of umb.	9 in. above s. p.	3 in. deep. Shrivelled between stomach and transverse colon. Could be pulled down to half way between umb. and s. p.	Liver visible superiorly. 2 inches of stomach below its lower border, part of transverse colon, and whole of small intestine exposed to view.
12	F.	45	Well nourished. $\frac{3}{4}$ in. of subcutaneous fat in abdominal cavity.	Pneumonia.	4 in. below x. c.	Level of umb.	6 in. above s. p. in middle line.	3 to 5 inches deep. Extended down to s. p. on left of middle line. Shrivelled up on right.	Liver and stomach visible superiorly. Transverse colon seen below them. Small intestine uncovered on right side and concealed by omentum on left.
13	M.	24	Well nourished. $\frac{1}{4}$ to 1 in. of fat in abdominal wall.	Fracture of skull.	3 in. below x. c.	3 in. above umb.	5 in. above s. p.	10 to 16 inches deep. Slightly loaded with fat. Extended down to s. p. on left side.	Liver and stomach visible superiorly. Transverse colon partially obscured by omentum. Small intestine covered by omentum on left side; uncovered on right.
14	M.	50	Well nourished. $\frac{1}{4}$ to 1 in. of fat in abdominal wall.	Fracture of skull.	2 $\frac{1}{2}$ in. below x. c.	4 in. above umb.	6 in. above s. p.	9 inches deep. Could be pulled down to symph. pubis. Contained a good deal of fat.	Liver seen superiorly. Stomach and transverse colon concealed by omentum. Small intestine covered by omentum superiorly; uncovered below.
15	M.	73	Emaciated.	Chronic bronchitis, ascites.	2 in. below x. c.	4 in. above umb.	9 in. above s. p.	8 X 12 in. Membranous. Could be pulled down to s. p.	Liver visible superiorly. Stomach, transverse colon, and omentum concealed by folds of small intestine, which were uncovered.
16	F.	40	Emaciated.	Heart disease.	5 in. below x. c.	3 in. below umb.	4 in. above s. p.	3 in. deep. Adhered below to sac containing feces.	Liver and stomach visible superiorly. Tumour in right iliac and hypogastric region. Small intestine uncovered to left of them.
17	F.	46	Well nourished. $\frac{3}{4}$ in. of fat in abdominal wall.	Cirrhosis. Ascites.	5 $\frac{1}{2}$ in. below x. c.	1 $\frac{1}{2}$ in. below umb.	5 $\frac{1}{2}$ in. above s. p.	12 X 18 in. $\frac{3}{4}$ in. thick. Could be pulled down beyond s. p.	Liver and stomach seen superiorly. Transverse colon seen below them. Small intestine partially covered by omentum.
18	M.	66	Emaciated.	Syncope.	3 in. below x. c.	2 in. above umb.	3 in. above s. p.	2 to 6 in. deep X 9 to 12 broad. Moderately loaded with fat. Could be pulled half way down to s. p.	Liver seen superiorly. Small intestine uncovered below it, concealing stomach, transverse colon, and omentum.
19	M.	46	Emaciated. Anasarca.	Chronic Bright's disease.	3 in. below x. c.	1 in. above umb.	6 in. above s. p.	5 to 6 in. deep X 9 or 10 broad. Deeper on left side. Moderately fatty. Could be pulled down to s. p.	Enlarged liver visible superiorly, concealing contracted stomach. Transverse colon almost concealed by omentum. Small intestine uncovered.
20	F.	22	Well nourished. $\frac{3}{4}$ to 1 in. of subcutaneous fat.	Tubercular meningitis.	Level of x. c.	$\frac{1}{2}$ in. above umb.	About 12 in. above s. p.	7 in. X 12 in. Symmetrical, moderately loaded with fat. Could be pulled down to near symph. pubis.	Small bit of liver seen superiorly. Transverse colon, cecum, and sigmoid flexure, and a few folds of small intestine, all quite uncovered, exposed. Omentum shrivelled and crumpled beneath dilated and crumpled transverse colon.

ARTICLE II.—*Case of Procidentia Uteri.* By J. MATTHEWS
DUNCAN, M.D.

(Communicated to the Obstetrical Society of Edinburgh on 23d May 1877.)

IN former writings on this subject, especially in the *Edinburgh Medical Journal* for January 1872, I have insisted on the purely mechanical nature of this disease; that it is like a dislocation or a hernia; that, if hypertrophy favours its production, it is by the increase of weight it implies; that, if relaxation or laceration of tissues favour its production, it is by removal or diminution of resistance. I have also insisted on the misleading character of the nomenclature generally used, pointing out that the womb is most unfortunately chosen to give a name to the disease, for the bladder or the vagina more frequently occupies the place of ringleader in the mischief than the womb; that the womb indeed, in the great majority of cases, is a chief agent in restraining or diminishing the mischief, trying to keep back the descending parts, and while refusing to descend frankly, suffering tensile elongation, not hypertrophic elongation. These and many other important points in the pathology of this important disease I need not here further enumerate.

The paper to which I have referred is entitled "Procidentia of the pelvic viscera," and properly so, as it was to them exclusively that I wished to direct attention. But that designation is far from being an unobjectionable one, for in an ordinary case of procidentia uteri, it is not the pelvic viscera only that are displaced. The disease is one affecting fundamentally the retentive power of the abdomen. The negative condition of this power leads to retroflexion, retroversion, descent of and procidentia of the uterus, to hernia, to piles, and probably to some mucous polypi of the uterus, and to many other diseases.

In a case of procidentia uteri, it is not only the pelvic viscera that are displaced downwards, but the whole or a part of the abdominal viscera, and parts external to the abdomen, as the pudenda and the hips. The descent of these last can be easily seen by any one observing a case in which the procidentia is quickly reproduced after reposition. This quick reproduction of the disease is nearly an exact copy of its original production; only, that what may have originally taken a year or years to effect, is now, after replacement or being undone, reproduced in a minute by the voluntary bearing-down effort.

These views have an inalienable right to guide practice. Without true views we can only expect to arrive at right practice by haphazard. The maintaining of the replacement of the procident organs is generally done by a small amount of force. Very often restoration of the perineum is sufficient. Sometimes it is not.

The following case I give from the notes of my clinical clerk, Mr

Stuart Palm. It is valuable because of its long history. It was carefully described in my case-book in 1866, and is now under observation in 1877. During the interval of eleven years it has undergone many remarkable changes, which are also instructive.

A. P., æt. 41, unmarried, was confined of twins fourteen years ago. She made a good recovery. Three months afterwards, having taken a walk, she observed that her womb came down. Since then the protruding mass has increased.

In March 1866, about three years after the first descent, the procident mass was examined by me. It was of the size of a large turkey's egg. The entire infravaginal portion of the cervix was ulcerated, the ulcer having raised red edges. The os tincæ gaped so as to admit a finger easily. The supravaginal portion of the cervix was elongated, and the neck of the womb could be felt ascending into the pelvis. The uterine sound passed inwards five and a half inches from the os tincæ. The fundus uteri was in the hollow of the sacrum. The perineum was entire, but virtually destroyed by being pressed back by the protruding mass. At the left side of the orifice of the urethra was a deep ulcer large enough to hold a split pea. There were two ulcerations of a like size on the side of the vagina, the posterior being at the site of the opening of the duct of the vulvo-vaginal gland: they bled when touched, and had the appearance of recent wounds.

All the details of the further history of the case may be passed over, except that the usual operation for restoration of the perineum, with a view to maintain reposition of the displaced organs, was successfully performed. The patient on 10th April was dismissed from hospital, cured.

But the cure was not lasting. Three months after the operation the womb again became procident, and it has remained so ever since, that is for eleven years.

She now complains that her menses come on every fortnight, last for a week, and are occasionally profuse. She has bearing-down pains, difficulty and pain in micturition and defecation, and irritability of bladder.

In April 1877, fourteen years after the first descent, and eleven years since the date of the first examination of her case, the following conditions are observed.

The procident mass is four inches in the anteroposterior, its greatest diameter, and about half as much in the transverse diameter. There is no infravaginal portion of the cervix uteri. The os tincæ is a minute opening without any neighbouring discoloration or prominence to attract attention to it. An ordinary uterine probe does not pass through it, but may be forced. It enters $2\frac{1}{4}$ inches. The fundus uteri can be felt in the prolapsed mass in front of and below the anterior edge of the perineum. An ovary can be felt behind the ascending ramus of the left ischium. The uterus is slightly retroflected. The urethral orifice is surrounded by an

irritable sore which is deep posteriorly. The bladder is in its ordinary displaced situation and healthy, as far as can be made out. The rectum is not pouched anteriorly. Upon the middle of the posterior wall of the vagina is a rounded ulceration with elevated red edges, of about an inch and a half in its largest diameter.

These conditions, and the contrast of them with those observed eleven years previously, deserve to fix the attention of obstetricians; but it is only to some of them that I at present refer.

The infravaginal portion of the cervix has become atrophied and disappeared, while the uterus was procident and before the menopause.

The whole uterus has become atrophied before the menopause, and not in connexion with abortion or delivery at full time.

The ulceration of the cervix has during the same time disappeared.

The os uteri, from being large and patulous, has become minute, while the uterus was procident and before the menopause.

Menstruation with copious discharge takes place through the unnaturally small os without any dysmenorrhœal pain.

Menstruation is too frequent and too abundant from an atrophied uterus of $2\frac{1}{4}$ inches in length.

While the size of the procident mass has increased, the length of the uterus or of its cervix has diminished. The whole uterine cavity was $5\frac{1}{2}$ inches long; it is now only $2\frac{1}{4}$. This distinctly confirms an observation by J. Veit,¹ that complete uterine procidentia is (generally) a consequence of incomplete procidentia with cervical hypertrophy, through secondary atrophy.

Cases like that just related form for the gynæcologist a comparatively easy problem. Among the more difficult are the cases of procidentia of the elongated cervix in pregnancy, or when the uterus is fixed above the pelvic brim, being enlarged by a fibroid. At present there is under my care a large procidentia in which the uterine body is fixed high in the pelvis by a large cystic tumour with which it has connexion. In this case the procidentia is a true vaginal rectocele, the rectum being deeply pouched anteriorly. The cervix uteri is not procident, nor yet hypertrophied as a whole, but there is tensile elongation or hypertrophy of the posterior lip to the extent of an inch beyond the limit of the anterior.

Progress in our intelligence of exceptional or uncommon cases like that last alluded to is to be made by further researches into the retentive power of the abdomen, such as that of Odebrecht.²

¹ *Zeitschrift für Geb. und Gyn.*, 1877.

² *Berlin Klin. Wochenschrift*, 1875, No. 14.

ARTICLE III.—*Chronic Endo-Carditis, Independent of Rheumatism and Amenable to Treatment, Simulating Confirmed and Irremediable Valvular Disease.* By BENJAMIN BELL, F.R.C.S.E.

IN a review of the work of Dr P. M. Latham, on *Diseases of the Heart*, in the *Edinburgh Medical Journal* for March 1877, the following sentences occur: "We call attention to Lecture xvi. This is very suggestive, and must be read with much interest when we remember its date. It speaks of *endo-carditis independent of rheumatism*, and specially points out a class of cases where the patient may labour under the affection for weeks, and even months, and is regarded as a hopeless subject of heart disease, when a prolonged and well-directed course of mercury might diminish if not remove the symptoms."

The following case seems to be one of those alluded to by Dr Latham, and we publish it with the view of confirming what may be regarded as a very important doctrine, viz., that all cases of valvular affection, not traceable to an attack of acute rheumatism, are not on that account to be regarded as essentially chronic and irremediable from the beginning.

A man from the country, rather below the middle stature, strongly-built, broad-chested, 49 years of age, consulted me on the 7th of February 1877. He keeps a public-house, and has enjoyed robust health until about four months ago, when he began to suffer from an abiding pain of some severity in the cardiac region, accompanied by an increasing breathlessness on the slightest effort. He cannot now face even a gentle ascent, and, having come to my house in a conveyance, found great difficulty in mounting several steps leading up to the door. He gets little sleep at night, and requires to be raised up in bed.

His trade has thrown difficulties hitherto in the way of his being altogether temperate in the matter of stimulants; but he seldom takes more than two gills of spirits in the day.

He connects the beginning of his symptoms with two circumstances: 1. Early in last September, after an unwonted and rather prolonged effort of lifting some bags of potatoes, he felt a sudden pain in the region of the heart, accompanied by faintness and a sense of approaching dissolution. A little brandy restored him, and he was much in his usual health on the following day. 2. About the same date he had a struggle with a tipsy man who had made himself troublesome, and whom he wished to eject from the premises. From that time to this he has never been free from pain in his chest, and a growing sense of breathlessness and disability upon any exertion.

His pulse is regular, of good strength, not affected in any way. There is nothing amiss with the lungs. There is no abnormal dulness in the præcordial region; but, on auscultation, a decided

murmur during the systole is audible, chiefly towards the base of the heart. There is also, perhaps, some increased impulse at the apex. No dropsical symptoms are present; but considerable flatulent distension of the abdomen.

He mentioned, as the surface of his chest indicated, that mustard poultices and other forms of counter-irritation had been assiduously employed, and that he was now taking some fluid medicine internally, the nature of which he did not know.

At this, his first visit, I was disposed to regard the case as one in which palliation of urgent symptoms was the object to be aimed at, the period for arresting inflammatory processes—if these once existed—having probably passed. I contented myself, therefore, with interdicting all stimulants; prescribing a pill containing a grain of the pil. hydrarg., a grain and a half respectively of hyoscyamus and gentian, every night, in the hope of unloading the liver, —the vessels of which were probably congested—and, in addition, a mixture to be taken twice a day, with acetate of potash and infusion of digitalis.

Farther reflection, however, on the history of the case and the prominent symptom of *abiding pain*, led me to the conclusion that probably a sub-acute endo-carditis was going on which might yet admit of being arrested by appropriate remedies. I wrote therefore to his usual medical friend in the country, explaining my view of the case, and requesting him to send the patient back to me in a week.

He returned on the 14th, feeling a little better, and thinking that the pain was more limited in its area. I advised, on this occasion, that six leeches should be applied to the seat of pain, and that a pill containing half a grain of the green iodide of mercury and quarter of a grain of opium should be taken every eight hours.

21st.—Four of the six leeches had bled freely, with manifest relief to the pain; the pills had been taken regularly, and his gums were sore. The heart's action was calm; the murmur diminished in intensity. He could now lie down on his bed at night and sleep quietly. Ascending a stair caused little uneasiness or discomfort; and the pain in the præcordial region was by no means constant as formerly, and, when present, greatly deadened.

He was now to take half a pill, that is to say, quarter of a grain of the green iodide twice a day, and an occasional dose of the diuretic medicine formerly prescribed.

27th.—His breathing is now quite comfortable, and hardly any exertion causes disturbance. The gums are still a little tender. A quarter of a pill to be taken twice a day. To return in a fortnight.

13th March.—Better in every respect. The original pain quite gone, although there is a feeling of rawness in the middle of the chest, higher up, from a slight catarrhal affection. He can move freely now without dyspnoea, and still sleeps comfortably at night.

The pulse is calm, regular, and of good strength. The murmur or bruit seems to be gone, or nearly so; the natural sounds being more loudly intonated than usual.

The pills are to be discontinued. The mixture with digitalis to be taken for a time, twice in the day. The disuse of stimulants and the avoidance of every undue and unnecessary exertion were strictly enjoined.

It may be added that, on minute inquiry, I could discover no ground for tracing the endo-carditis in the foregoing case to any syphilitic taint in the constitution.

The value of this history will, I am sure, be enhanced by appending the following analogous case from Dr Latham's work, with his clinical remarks upon it:—

“H. B., æt. 43, presented himself to me one morning, with a countenance full and florid, and complained of a pain and sense of weight and tightness between mamma and mamma, occupying a space large enough to require the whole hand to cover it. The pain, he said, was not constant, but was more on than off. It had thus endured between two and three months, and was certainly on the increase. Lately, some dyspnœa had been added to it. The dyspnœa, but not the pain, was augmented by exertion. His pulse was 80, and irregular, without any peculiar character of hardness or fulness.

“Auscultation found a perfectly healthy respiration, but a very loud systolic endo-cardial murmur at the apex of the heart. On this occasion, he, being hot and perspiring, was examined through his shirt and flannel waistcoat. The man was a collector of taxes. He had never known illness before. He was habitually a full liver, eating abundance of animal food, and drinking plenty of beer and porter.

“In this case, I had no other thought than that the murmur proceeded from some tardy conversion of a portion of the mitral valve into cartilage or bone, which, by its gradual increase, had now reached a point at which the heart and circulation must begin to feel it, and must ever continue to feel it painfully and injuriously. I could not, however, tell how long the murmur had existed, and so, for the sake of creating a little hope for myself in the management of the case, I was willing to believe that it might not have existed earlier than the date the patient gave of his own uneasiness, and that it might then have arisen from, and might still be due to, some active process of disease within the reach of a remedy; and I set about its treatment accordingly.

“I ordered ten leeches to the præcordial region and some active aperient medicine; and I enjoined a rigid abstinence from all wines and fermented drinks, and perfect rest at home. Three days afterwards he spoke of a general sense of relief, but said the pain was more abated than the dyspnœa. I now made a more accurate auscultation of the bare chest, and found the murmur less loud.

It accompanied the systole, and the limit within which it was heard included about an inch and a half of the præcordial region, viz., the mamma, and a little space on the sternal side of it and below it. There was dulness of percussion at the apex, and for a couple of inches lower down. There was no perceptible increase of impulse. The murmur, which was manifestly less while he remained still, became as loud as ever after he had walked twice across the room.

"I ordered ten more leeches to the præcordial region, and two grains of calomel every six hours.

"In three days more the murmur had certainly still decreased; there was no salivation; he was ordered to continue the calomel.

"In seven days more he was fairly salivated, and had been so five days. I was not certain of any murmur; the sounds of the heart were loudly intonated, but it was doubtful whether they were really unnatural. I wished the salivation to be still maintained by two grains of calomel every night.

"In seven days more, upon a very patient auscultation, I satisfied myself that there was still just that degree of prolongation, and that slight roughness of the first sound which one hears before the murmur is decidedly audible in acute rheumatism. Exertion brought out the real murmur, but it was very faint; no dulness to percussion remained in the situation first indicated.

"Salivation to be maintained. In seven days more I found that, since I last saw him, he had been following the same plan of treatment, except that he had not observed perfect rest. He had walked about as usual in his business, but had been careful to avoid all hurry. He spoke of a *sensation about his heart*; it was not pain; he could not tell what it was, or whether it was without or within; it was not always present, nor was it increased by exertion; but there was something which he could only call a *sensation*. After very attentively examining him, and making him walk rapidly about my room, my ear could detect no murmur, or any other unnatural sound accompanying the movements of the heart.

"If I have rightly interpreted the nature of this case, here was endo-carditis arising and existing as the whole and sole disease, unaccompanied by rheumatism or by any other known malady elsewhere in the body. At all events, here was a formidable group of symptoms, all referable to the heart, and all gradually disappearing, and the murmur among the rest, under the use of remedies addressed to the purpose of arresting inflammation."

ARTICLE IV.—*Case of Infanticide by Asphyxia, in which the Four Cavities of the Heart were found Empty.* By KEITH NORMAN MACDONALD, Esq., M.D. Erlang., F.R.C.P. Edin., L.R.C.P. Lond., etc.

THE absence of blood from the right side of the heart in cases of death from asphyxia is so rare an occurrence, and of so much importance from a medico-legal point of view, that I presume no apology need be offered in submitting the following notes for the consideration of those who take an interest in that particular line of study.

The case I am about to relate was that of Catherine Wood, aged 18, an unmarried servant-girl, residing at St Andrews, who was indicted on a charge of child-murder at the Perth Circuit Court, on the 29th of March 1877; but, owing to some technical mistake in the indictment, she was allowed to plead guilty to the minor charge of concealment of pregnancy, a plea which the Court accepted; consequently, the case did not go on for trial. If it had gone on for trial, the difficulty and interest of the case would have centred in the question, How were the post-mortem appearances about the heart, presently to be described, to be reconciled with the circumstantial evidence of the cause of death. My colleague, Dr Mackie, with whom I examined the case, was equally at a loss with myself to account satisfactorily for the particular condition which our dissection revealed; yet we were prepared to meet counsel with explanations which, if not satisfactory, would at least not involve any contradiction so far as the medical evidence was concerned.

I shall first consider the medical aspects of the case.

On the 20th February 1877, Dr Mackie and myself, on a warrant from the sheriff-depute of the county of Fife, made a post-mortem examination at the Police Office, Cupar, on the body of a female child handed over to us by the authorities for the purpose of ascertaining the cause of death. The body, which was covered over with coal-dust, measured 20 inches in length, and weighed 4 lbs. There was no post-mortem rigidity, neither were there any perceptible signs of decomposition having set in.

On washing the body, we found that there were no marks of external violence having been applied, with the exception of the umbilical cord, which appeared to have been lacerated or severed with a blunt instrument six inches from the navel, which in other respects had not undergone any change.

The limbs were perfectly flaccid. The fingers were flexed. The countenance was placid; the eyes, mouth, and nostrils being open. The head was plentifully covered with hair, and the nails were fully developed. The scalp was puffy over the right parietal bone, which, on section, presented a dark red colour

from congestion, probably caused by pressure during labour, the ordinary caput succedaneum. On opening the head the membranes of the brain were found congested; but the brain substance itself was natural, without any effusion into the lateral ventricles. The anterior portion of the medulla oblongata was of a bright red colour; and some bloody serum was found at the base of the brain.

The mouth and pharynx were filled with coal-dust, and small particles of the same material, which on microscopic examination exhibited the structure of vegetable matter, were found in the stomach embedded in a glairy-coloured mucus. There was no food in the stomach.

The mucous membrane of the trachea was congested, and, on opening the chest, the lungs presented a dark red hue, and occupied half the cavity without overlapping the pericardium. The pulmonary vessels and substance of the lungs contained dark fluid blood; but there were no patches of ecchymosis to be seen anywhere. The lungs were slightly crepitant, and floated freely in water; so did portions of the same after being squeezed in a cloth. They weighed 874 grains. The thymus gland was of a pale pinkish hue, and occupied the upper portion of the cavity of the chest. The pericardium was of a light red colour, and the four cavities of the heart were found empty. The ductus arteriosus and foramen ovale were pervious, and the heart itself presented nothing unusual. The urinary and gall bladders were nearly full, and the large intestines contained meconium. The liver, spleen, and kidneys were quite healthy, and the body did not appear to be particularly anæmic.

From the result of our examination, we gave it as our opinion that the child had arrived at the full term of utero-gestation, that it was born alive, and had breathed, and that the cause of death was suffocation. So much for the medical facts of the case.

The circumstantial evidence implicating the girl Catherine Wood with the affair was very clear. She had been serving in the house immediately adjoining the coal-house in which the body was found, and traces of spots of blood were detected between her bedroom window and the coal-house; yet she went about as if nothing had happened. Besides, a medical examination on the 20th February, two days after the occurrence, showed that she had recently given birth to a child, and she herself confessed to having done so; and milk appeared in her breasts on the fourth day after delivery. The connecting link here was so strong that there could scarcely be room for doubt; the only question remaining being how the coal-dust got into the mouth. A child, immediately after birth, thrown upon, or into a coal-heap, could scarcely have filled its mouth and pharynx with coal-dust; yet, the omission of the presence of the foreign body in the latter in the indictment was, I understand, the cause of the case having fallen to the ground on

the graver charge, though it was distinctly stated in the medical report. As regards the probability of umbilical hæmorrhage having been the immediate cause of death, there was no evidence to show. The ruptured state of the cord would have acted as a natural hæmostatic, besides, the umbilical arteries at the points of division had retracted, and, as there was apparently no deficiency of blood in the body generally, such a view could not be entertained by us. Perhaps the most probable view is, that death took place immediately after birth, even before the umbilical hæmorrhage had entirely ceased, and that the state of the ductus arteriosus and foramen ovale in some way disposed, together with the fluidity of the blood, to the unusual appearances which were met with.

ARTICLE V.—*Case of Spontaneous Version after the Rupture of the Membranes in a Primipara.* By Dr C. E. UNDERHILL.

THE following case is interesting as being a good example of an uncommon event, namely, the change in the position of a fœtus from a head presentation to a breech presentation after the membranes are ruptured, and when a considerable part of the waters have drained away.

Mrs M., primipara, a healthy, well-made young woman, aged about twenty-five, had arrived at the middle of the ninth month of pregnancy. She was not very large. On the evening of the 31st May 1875, when down stairs in a dark room she gave her abdomen a slight blow against the edge of an open door; this caused little pain or inconvenience at the time, but she was awakened about two o'clock in the morning by finding herself very wet and uncomfortable—"just swimming in water," as she said. This she supposed was urine dribbling away without her being able to control it. When I saw her an hour later, I found the os sufficiently open to admit one finger, the cervix about an inch and a half in length, and the uterus acutely antelected, the membranes ruptured and water coming away; the head was presenting in the pelvis, and lying in the first position of Nægele; there was no difficulty in making out its position. The child was alive. She noticed that the water came away more freely when she was in the recumbent posture than when she was standing up. No pains had at this time been felt. She was ordered to keep very quiet and lie down. The pains began slightly in the course of the day, but did not come on with any severity until the evening of the next day, 2d June. In the course of that afternoon the nurse noticed some meconium coming away, and on examination found a breech presenting. I was not sent for until 9 P.M., when I found the child had been born half an hour, dead, and coming with the breech first. The nurse told me that the head had been delayed at the perineum for a considerable

time after the birth of the body. The child, a female, was of medium size (not weighed), and exceedingly pallid, but otherwise appeared healthy—the lips were black, and the labia minora uncovered. The mother made a very good and rapid recovery, and soon became pregnant again without any appearance of the menses. She was confined at the full time of a healthy child, in the middle of June, last year.

There are two or three points worthy of short notice in this case. First, the uterus was acutely antelected; that is, the fundus was of course directed forwards, and so also was the cervix, its cavity being very nearly in the same line as the vagina. Some authorities—Graily Hewitt, for instance—look upon this condition as a cause of the vomiting of pregnancy, but Mrs M. was entirely free from vomiting or even nausea, in both the first and second pregnancies. Secondly, the cervix was between an inch and an inch and a half in length, so that the taking up of the cervix into the cavity of the body, preparatory to the first stage of labour, had not yet occurred, and that within a fortnight of the full time. Thirdly, there was no menstruation between the first confinement and the second. This circumstance is not very common, but there are plenty of recorded instances—these, however, most frequently relate to women who have continued to nurse their children until the occurrence of the second pregnancy has caused the milk to fail. Mrs M. had no opportunity of nursing, and the milk gave her little trouble.

The change in position of the child, that is, the spontaneous version, is however the most unusual feature in the case. That changes of this kind take place frequently in the last months of pregnancy is now well known, from the observations of Heyerdahl, Valenta, Schultze, Hœning, and others; and it has been shown that the more frequent the examinations made, the more changes are found. But these changes decrease rapidly in frequency the nearer we approach to the end of pregnancy, and are far less frequent in primiparæ than in multiparæ. Schultze found no case of complete version in a primipara within the last three weeks; Hœning, who observes that the very few versions that occurred in the primiparæ he examined within the last six weeks, were almost all in cases with contracted pelvis, met with no instance of complete version in a primipara at a later period than seven days before labour, and only two such within a fortnight. His investigations, it is true, did not extend over a very large series of women, but the number of examinations made was very considerable, averaging more than twenty in each case. Among his 53 primiparæ, 19 showed no change at all; while in 34 there were 15 complete versions and 38 partial versions, *i.e.*, from head or breech to shoulder, and *vice versa* besides 206 changes from one position of the head or breech to another of the same part. In one of his primiparæ complete version took place four times within the last four weeks of preg-

nancy. He points out also that head presentations are much more stable than breech presentations, especially among primiparæ, that is to say, that the change from breech to head is much more frequent than from head to breech. In the day before birth there was no change of position of any kind among his primiparæ, and only one among his 34 multiparæ.

My case appears to be worthy of record, in that the change, one from head to breech, took place in a primipara, in a well-formed pelvis, within forty hours of the birth, and after evacuation, perhaps only partial, of the waters; it is to be borne in mind that the child was at least a fortnight premature.

I may add that a case in some respects similar to mine has been recorded very recently by Dr Cordes, of Geneva.¹ His patient, who was a multipara, aged forty, in her sixth pregnancy, had arrived at full time. When first examined, 16th April 1876, the neck was found nearly taken up, high up and behind; the belly was pendulous, and the abdominal walls very thin; the breech was made out to present by external manipulation and auscultation; the pains did not come on, and labour was delayed until 24th April, when, at 9 o'clock A.M., the left ischiatic tuberosity was felt presenting, membranes unruptured; at 11.15 the neck was higher, and no presenting part could be felt; at 5.15 the head was felt in the right-occipito-anterior position. The child was born alive at 10 o'clock—the membranes had remained entire until after 8 o'clock, and were said to contain a large quantity of liquor amnii. Here the spontaneous version took place during labour, but the patient was a multipara, with pendulous belly and unruptured membranes, and the change that took place was the more common one, from the breech to the head presentation.

Murphy² records a somewhat similar observation, in which the breech replaced the head. It was observed by Dr Johnson, of Stoke-upon-Trent. The patient, a primipara, was in labour when first examined, the os dilated to about the size of a crown-piece, head presenting, in right-occipito-posterior position; an hour later, when the membranes ruptured, a breech was found presenting. The child had a swelling on the upper part of the left parietal bone; this appears to have been a cephalhæmatoma.

ARTICLE VI.—*Case of Triplets—complicated with Puerperal Convulsions after Delivery.* By W. A. FINLAY, M.D.

(Read before the Obstetrical Society of Edinburgh, 24th January 1877.)

THE patient, Mrs C., a primipara, æt. 25 years, had been married ten calendar months previous to her confinement. She is a native

¹ *Annales de Gynécologie*, July 1876, p. 41.

² *Dublin Med. Journal*, May 1863, p. 471.

of the fishing village of Kiess, in the north of Scotland. Her husband is also a native of the north of Scotland, and is 29 years of age. The patient's friends informed me that during the last two months of pregnancy she had suffered from swelling of the legs and lower eyelids. At the time of her confinement there was great cedema of both lower extremities. I was called to see her on the night of the 18th of September 1876, and on arriving at 10.15 o'clock, I found that a living child, a male, had been born a quarter of an hour before my arrival. The midwife in attendance stated that the presentation and birth of this child were normal. The labour had commenced at 11 P.M., so that she had been nine hours in labour when the first child was born. On examination, I found the breech of a second child presenting, the bag of membranes being still unruptured. Uterine action was slow in returning, and the pains were of short duration. Having given two doses (3i. each dose) of extract. ergot. liquidi, I ruptured the membranes, and after a few pains the child was expelled as far as the umbilicus. I then extracted the child (a female), which was dead, and had evidently been so for some time. It was at 1 A.M., three hours after the birth of the first child, that the second one was born. In about ten minutes after this, there was a slight return of uterine action, not greater than that which usually occurs for the expulsion of the placenta. I then examined and felt the breech of a third child presenting. The bag of membranes was entire, and I ruptured it at once and brought down the feet and extracted the child, which was a female, and still-born like its immediate predecessor. It was born at 1.30, half an hour after the birth of the second child. After this, the uterus, excited by external manipulation, soon expelled the placental mass, which was all in one. The umbilical cords of the first two children were inserted within two inches of each other near the lower border of the placenta, and the cord of the third child was inserted at a considerable distance higher up. Each child had a separate and distinct bag of membranes to itself. After complete delivery, the patient's pulse, which had been full, became weak, and fell to 60 beats per minute. An ounce of whisky having been given, and the binder firmly applied, the state of the pulse improved.

	Sex.		lbs.	oz.
The first child, a male, weighed		.	5	12
„ second „ female, „		.	3	8
„ third „ „ „		.	2	12
Total weight,				12 0

The male child is well and thriving, and up to this date has given no sign of being particularly weak. The second and third children were perfectly formed, although they were small. They had been dead for some time before birth. In the last the skin of

the abdomen was discoloured, but in neither of them was there any peeling of the cuticle.

The mother was restless for some hours after delivery. Next morning, at my visit, she said she felt well, but her face was puffy and of a bluish colour, and she had passed urine involuntarily. About 4 o'clock on the 19th (about fourteen hours after delivery), she had a violent convulsive fit, which lasted for ten minutes. This fit had ceased before my arrival, but the patient was dull and listless, and her tongue was cut, having been bitten during the convulsions. A fly-blister was applied to the nape of the neck, and ice to the forehead. Between this visit and my next one I mentioned the case to Dr Underhill, and we agreed that chloral was the best drug to prescribe. At 7 P.M., I found that during the previous three hours she had had four fits, varying from ten to twenty minutes in duration. The discharge of blood during the day from the uterus had been free; and this, I suppose, had been of benefit. I prescribed thirty grains of chloral hydrate, which she took in one draught. After taking it she had one more fit, and then slept quietly for rather more than an hour. When she awoke the fits returned, and continued from 9 P.M. till 2 next morning. At 10 o'clock I saw her in a state of complete coma, with violent convulsions. In the early morning the swelling of the lower extremities began to diminish, and there was a profuse watery discharge from the vagina. This watery discharge was very marked, and continued for several days. During the whole day (20th) she was in an unconscious condition, but occasionally she swallowed a little beef-tea unconsciously. She had passed no urine except involuntarily. In the evening I drew off by catheter three ounces of urine, which was all that the bladder contained. On being tested, the urine was found to be highly albuminous, and its specific gravity 1.023. She was then conscious to a slight extent. The pupils contracted when a lighted taper was held near them.

On the morning of the 21st I found that she had passed a good night, having slept several hours. She seemed to recognise her friends, and although much confused in mind, she was certainly better. The following mixture was prescribed:—

R Potass. acetat., ℥ss.
Syrupi limonis. ℥ss.
Aquam puram, ad. ℥viii.

Sig.—Tablespoonful every four hours.

From that time the patient gradually improved. The œdema of the face and lower extremities diminished. Profuse diarrhœa set in, and seemed to be of much benefit to the patient. From time to time I tested the urine, and found that it was still albuminous. The last time I examined it, was about five weeks after delivery.

The patient's friends say that she has not been rendered less intelligent by the convulsions, and that she now seems to be as intelligent as she was before her confinement.

ARTICLE VII.—*Observations on the Hypodermic Injection of Remedies, with more especial reference to the Hypodermic Injection of Morphia and Cold Water.* By JOHN A. ERSKINE STUART, L.R.C.S. Edin., Musselburgh.

SINCE 1843, when Dr Alexander Wood was led, from observing the structure of the sting of a wasp, to recommend that opiates should be applied hypodermically to the affected part in cases of neuralgia, great improvements in the means of administration have taken place. Our solutions, thanks to the labours of the lamented Anstie, are now more concentrated, our needles and syringes are of better construction, and our knowledge of the subject has correspondingly increased. In 1858 Mr Charles Hunter, after the performance of a number of comparative experiments, found "that equal effects follow either distant or local injections." It is this discovery of which we are now reaping the fruits, for if the views of Dr Wood and Mr Rynd had not been overturned by Mr Hunter, hypodermic injection would most probably have occupied a very unimportant place among the therapeutic agents of the present day.

My object in writing this paper is principally to direct attention to a few points of interest regarding the action of remedies hypodermically applied, which have not previously attracted much attention, and which seem to me to be valuable in so far as they cast some light on the therapeutic applications of drugs thus used. In addition to the above-mentioned points, I will perhaps be excused if I begin my subject with a few suggestions as to improvements to be desired in the apparatus at present in use for carrying out the injections. I will, therefore, open the subject by directing attention to—1st, The solutions of morphia in use; and to 2d, The construction of needles and syringes, after which I shall proceed to the subject proper.

Solutions of Morphia.—In regard to solutions of morphia for hypodermic injection, we have the *injectio morphiæ hypodermica*, which contains half a grain of the acetate of morphia in six minims. It is a fact that this is by far the best preparation to use for hypodermic injection, for, as a rule, two minims is sufficient to relieve pain and induce sleep in even the most violent cases of rheumatism, neuralgia, delirium, and cramp. Notwithstanding its efficacy, we still find many using the solution of the bimeconate of morphia, which, in my experience at least, is very nearly useless as a rule. This solution, as usually prepared, is so weak as to require about twenty minims to be injected, and I may here observe that the injection of so large a quantity of fluid beneath the skin is attended with a most violent pain, which is quite avoidable if the British Pharmacopœia preparation mentioned above is used. Besides this, the sedative action produced by the bimeconate in

even 20-minim doses is almost *nil* when compared with the effect produced by 2 minims of the injectio morphiæ hypodermica.

Another advantage which can be claimed for the Pharmacopeia preparation is that, from its small dose, it can be easily carried in the injection case in sufficient quantity to last for a considerable period. It can also be much more easily used than Savory and Moore's disks, for they require first to be dissolved in water. By pouring out a few drops of the injectio into a teaspoon, the requisite quantity can be drawn into the syringe; and, if too much has been introduced into the teaspoon, it can be again returned to the phial, and none whatever wasted.

The Construction of Needles and Syringes.—It is proved by experience that steel needles are the best. They can be made sharper than either silver or gold, and are thus more easily introduced. To every one who uses hypodermic injections of morphia frequently, it must be evident that the needles are very troublesome to keep in a pervious condition, as the solutions, especially that of the B.P., are apt to crystallize inside the tube. To rectify this, the syringe-case should contain a small phial of oil, as some of them are now constructed, so as to afford an opportunity, after every injection, of passing the wires oiled. By this means the needles may generally be kept perfectly open, but if by any chance they do get blocked up, a drop of chloroform will be sufficient, if introduced by means of the wire, to remove the crystal. Another point in the construction of the syringe, where reform might be instituted, is the "washer" which keeps the needle tight when applied. From the constant dipping in the injection this often becomes softened, necessitating the application of a new one at frequent intervals, and eventually this softening permits the fluid to escape before entering the needle. I should recommend that the "washer" should be constructed of vulcanite, so as to stand a great deal of tear and wear.

The Hypodermic Injection of Morphia and Cold Water.—Having had under my care a patient who, for the greater part of every year, is a martyr to gout, and who experiences no relief to speak of from any treatment except the hypodermic injection of morphia, my attention was directed by him, at an early period of my attendance, to an effect produced by the hypodermic injection of morphia, viz., *itching of the skin*. I have since verified the truth of this statement by repeated experiments on myself, and I would now endeavour to explain this phenomenon. It is now well known that immediately after a hypodermic injection of morphia the temperature rises suddenly one or two degrees, the heart's action is greatly increased, and consequently the blood-pressure is in a like manner augmented. It seems to me that this intense itching of the skin is produced by an excess of blood being forced into the cutaneous vessels, giving rise to a feeling of itching, in much the

same way that the effusion of serum in an inflamed part gives rise to a similar sensation by pressing on the sensory nerves.

How does the Hypodermic Injection of Cold Water relieve Pain?
—This is an interesting question to those who have seen the effects of cold water as a hypodermic injection. That cold water *does* relieve pain there is no doubt, and it is no mere piece of imagination on the patient's part, as some have suggested, neither is the effect produced by it due to the acupuncture, as others have stated. The patient whom I previously mentioned had at times to be weaned from his morphia, as the repeated injections twice a day for a month began to act injuriously on the liver. At these intervals water injections were used, which he never detected at first, although afterwards he expressed suspicions regarding the quality of the morphia. I have injected into the cellular tissue of my leg a few drops of cold water, and find that immediately after so doing the heart begins to beat violently and the blood-pressure is augmented, as is indicated by a feeling of fulness of the circulation, especially in the head. It is only reasonable to suppose that the introduction of a foreign substance into the circulation through an abnormal channel will increase the quantity of fluid in the vessels, and thus the heart, having a greater quantity of fluid to propel, must rouse to greater efforts, and consequently we have an increased blood-pressure. Dr Léhut in *L'Union Médicale* of 5th October 1875 states how he first used water by the hypodermic method. A careless and deceitful servant, after spilling a bottle of morphia solution, tried to conceal her mistake by filling it with water. The doctor, not knowing this, used the contents next day for subcutaneous injection in a case of sciatica, and was surprised and delighted to find that the pain was removed without the nausea and sickness present on former occasions. He was thus led to examine the contents of the bottle, and found them to be pure water. He repeated the experiments on other patients, and found that it succeeded admirably. Drs Burney Yeo and Griffith, and M. Potain, have done much to make this method of treatment well known. Dr Lafitte¹ insists that the action of water subcutaneously injected is purely local, the fluid introduced compressing the peripheral extremities of the painful nerves. His words are as follows: "Le seul point important à noter et à retenir c'est de faire l'injection *au point douloureux*. Tout le secret d'une bonne opération est là!" That this opinion is entirely wrong is proved in an able manner by Dr Clement Lucas of Guy's Hospital,² whose treatment of a case of sciatica by injections of cold water into the arm was quite successful. The patient above mentioned, on whom I practised this method, had also the injections thrown into the arms for pains in the feet. Before concluding my remarks on the subject of the hypodermic use of water, I would remark that in some forms of neuralgia we have an impaired blood supply

¹ *L'Union Médicale*, 5th October 1875.

² *Lancet*, 4th March 1876.

going to the affected nerve, in others we have inflammation either in the nerve sheath or its more immediate surroundings. In the first-mentioned form (impaired vascularity) it is clear that probably the increased blood-pressure in the nerve occasioned by an injection of water will dull the pain, while in the inflammatory form the relief experienced from water will be but trifling, as I found in the gouty case, and it is in these cases that the action of morphia comes into play. It has been proved by Brunton that opium limits to a marked extent the vascular congestion in a part where inflammation has been artificially produced, and we have an exceedingly well-marked example of the truth of this in Dr MacDiarmid's "Case of Compound Fracture of the Patella," recorded in the October number of this journal. I have also observed the immediate relief experienced from the hypodermic injection of morphia in cases of pleurisy and peritonitis, where the pain was of a most agonizing character, and where complete relief and subsequent sleep was the result. Of course the pain returned, but only in a modified degree, and we must look at the effect of this method of treatment in cases of internal inflammation as not only sedative but in some measure curative. In fine, it is in cases where there is malnutrition, rather than inflammation, that water can be of any permanent value, and, on the other hand, morphia will have the most marked effect in cases where inflammation is the cause. I have endeavoured, in inditing these notes, to keep to a somewhat untrodden path, as it seems to me that this is a part of the subject requiring some elucidation, and therefore my object throughout has been to advance a theory as to the probable nature of the actions of morphia and water respectively.

In conclusion, it seems that, as time rolls on, our solutions and apparatus being improved, and our knowledge of the actions of drugs being also augmented, we will soon be able to apply hypodermically a number of substances at present not used in that way. The researches of Dr Duffey¹ in regard to hypodermic alimentation, Dr John MacDiarmid's paper on the hypodermic injection of morphia in insanity,² Dr Cuthill's researches in regard to the action of ergot on the non-striated muscular fibres, and many other important articles on kindred subjects, are all signs that great progress is being made in this department of therapeutics.

¹ *Dublin Journal of Medical Science*, June 1876.

² *Journal of Mental Science*, April 1876.

ARTICLE VIII.—*Case of Emphysema during Labour—Short Forceps—Rupture of Perineum—Operation for its Restoration.* By H. STANLEY NELSON, Royal Maternity Hospital.

(Read before the Obstetrical Society of Edinburgh, 14th February 1877.)

MARGARET IRVING, aged 24, primipara, was admitted to the Edinburgh Royal Maternity Hospital on 22d July 1876, under the care of Dr Matthews Duncan.

The patient is very fair, delicate-looking, and slightly made; never enjoyed good health, and latterly has felt very weak. Her catamenia first appeared when she was sixteen; two years elapsed before their return; since then they have appeared at irregular periods. Her pulse is intermittent. In the mitral area a systolic bruit can be heard. She menstruated last on 22d October 1875; cannot state definitely when she quickened. She was delivered 7th August 1876.

Labour commenced at 2 A.M. At 12 noon the os was about the size of half-a-crown, the parts being moist, soft, and cool. The child's head was in the fourth position of Nægele. At 1.5 P.M. os was completely dilated, and the membranes ruptured spontaneously. The occiput rotated forwards, and the head reached the outlet at 1.30, where, in spite of strong and regular pains, it remained for three hours and a half. At 5 o'clock swelling was observed over neck and lower jaw. The swelling extended backwards on each side of the neck to the edge of the trapezius muscle, and downwards in front of the sternum for about an inch. On palpation over this area, distinct crepitation was felt, and slight pressure gave considerable pain. Dr Duncan was now summoned. The swelling then extended upwards to the zygoma, and several severe attacks of dyspnoea, accompanied by great lividity of the lips, had occurred. The head now advanced and reached the perineum, but lay more transversely than usual. The caput succedaneum was considerable. Dr Duncan applied the forceps; and while he was making only slight traction with one hand, the perineum gave way, the tear extending through the whole length of the perineum, through the sphincter ani, and up the rectum for fully an inch. Upon the completion of delivery the edges of the wound were drawn together with six silver sutures, one being placed in the rectum, one above the verge of the anus, and four in the perineum. The wound was dressed with lint soaked in carbolic oil (1-20), and the vulval cloths thoroughly damped with carbolic lotion (1-40). The patient was ordered 30 minims of tincture of opium at night.

Evening.—Pulse, 108; temperature, 101.4°.

8th August.—Morning.—Pulse, 84; temp. 99°. Did not rest well. Urine drawn off, and found to be acid and slightly albuminous.

Perineal wound looks well. Pain over sternum and neck on slight pressure. Swelling slightly diminished.

Evening.—Pulse, 84; temp. 100°. Opiate repeated. Urine drawn off.

9th.—*Morning.*—Pulse, 80; temp. 98·8°. Slept better. Perineal wound healing kindly. Pain over sternum less. Urine drawn off. Albumen less.

Evening.—Pulse, 112; temp. 102·6°.

10th.—Emphysema on face and neck much diminished; exists to a greater extent on left than right side. Perineum looks well. Passed urine spontaneously in evening.

11th.—Swelling of face and neck much diminished; still continues above the centre of clavicles and over upper part of sternum, and on the face is limited to parts overlying the masseter muscle, being still most marked on the left side. Urine passed spontaneously, and, on being examined, was found to be albuminous, but, from the discharges being mixed with it, the indication was rendered uncertain.

12th.—*Morning.*—Pulse, 100; temp. 100·2°. Emphysema much diminished, especially on the neck. Perineum doing well. Urine drawn off; still slightly albuminous.

Evening.—Pulse, 88; temp. 99·8°.

13th.—*Morning.*—Pulse, 96; temp. 101°. Emphysema almost gone.

Evening.—Pulse, 92; temp. 101·4°.

14th.—*Morning.*—Pulse, 92; temp. 99·8°. Emphysema entirely gone. Four perineal stitches removed. A small amount of pus escaped on pressure.

Evening.—Pulse, 102; temp. 100·4°.

On the 15th the two remaining stitches were removed. Up to this date patient's bowels had been kept unmoved by tincture of opium. On the 16th she complained of pain and tenderness in the right iliac fossa and headache. She was ordered castor-oil and hot fomentations; the action of the oil to be followed by an opiate. On the 18th she was much better. Catheter still requisite, and urine very slightly albuminous. There was a considerable purulent discharge from perineum. The rectal wound was completely healed. On the 21st patient passed urine spontaneously. She was now put on meat diet.

The patient was discharged on the 7th September, one month after her delivery, with a full half-inch of perineum and the rectal wound completely healed. No further operation was recommended.

ARTICLE IX.—*Notes of a Case of Supplementary Axillary Mammæ.*
By ORMOND H. GARLAND, M.B., M.R.C.P.E., Leith.

ON the evening of Sunday the 11th March, Mrs H., æt. 35, was delivered of her third child by my temporary assistant Mr Thomas Gordon. On the following Wednesday forenoon, I visited the patient, for the first time, when my attention was directed to two swellings in the axillæ, each about the size of a goose-egg, and lying parallel to the margin of the pectoralis major muscle. They were completely isolated, and no anatomical connexion could be traced between them and the mammæ proper. They were exceedingly tender to the touch, and, on making examination, felt exactly like the mamma distended with milk, the glandular structure being easily made out. Unlike the case of mamma succenturiata, reported by Dr Matthews Duncan in the *Obstetrical Journal*, vol. i. page 516, there were no apparent external openings. On making subsequent examinations at different times, I found that they varied in size according to the amount of lacteal engorgement, and lessened when the child was applied to the breast and sucked vigorously, afterwards increasing as the milk secretion returned.

From the time the patient got out of bed and began moving about, they gradually and permanently diminished in size; and, on the 14th of April, five weeks after accouchement, when I last saw the patient, all traces of them had disappeared. She, however, informed me that, if for any reason the child had not sucked during the night, the swellings were still discernible in the morning.

History.—Similar swellings, the patient tells me, have made their appearance at both her former confinements. These having occurred in different parts of the country, on each occasion she had been attended by a different medical practitioner, to neither of whom she spoke about them, thinking they were quite natural. Their existence would likewise have escaped my knowledge, had it not so happened that, at the time of my visit, they were giving rise to an unusual amount of pain and discomfort, on account of their distended condition. Further, she assured me of the curious fact that her first intimation of being *enceinte* had on each occasion been conveyed to her through the appearance of these tumours; which, however, during her state of pregnancy remained moderate in size, but so tender and painful, that it was quite impossible for her to wear stays or a tightly-fitting dress.

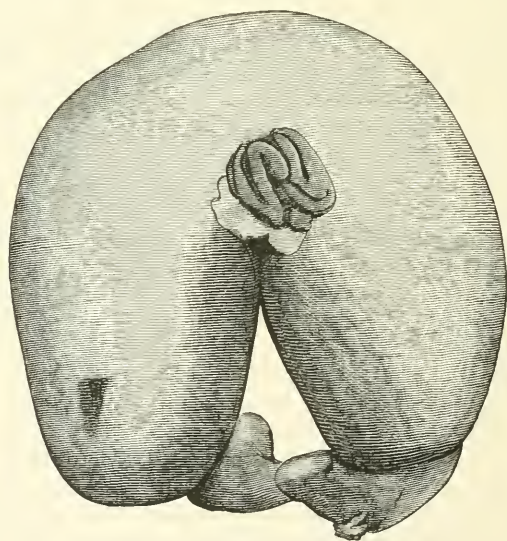
Family History.—The patient has been married for twelve years, had her last child seven years ago, and in the interval has not miscarried, nor have the swellings ever been present. An only married sister has had three children, and similar enlargements have likewise appeared in her case on each occasion. The mother of the patient states that she never had any such thing, and knew of none of her relations who ever had.

ARTICLE X.—*Description of an Acardiac Fætus.* By Professor ALEXANDER RUSSELL SIMPSON, M.D., President of the Edinburgh Obstetrical Society.

(Communicated to the *Edinburgh Obstetrical Society*, 25th April 1877.)

THE monster which I have to bring under the notice of the Society was brought to me, on 23d March, by a midwife who is in the habit of attending parturient women of the poorer classes, with the following history:—

Mrs C., aged 20, gave birth to her first child, a girl, on 25th December 1873, being then $16\frac{1}{2}$ years of age, and to a second girl on 14th June 1875. The labours on both occasions were easy; the children, well-formed and healthy, were nursed by the mother. She fell in labour at the full term of her third pregnancy on 17th March 1877, and, as usual, after a labour which was not attended with any notable escape of liquor amnii or other special feature, a healthy, well-developed, but small-sized, girl was born. The umbilical cord was tied in two places, and divided between the ligatures. The child was laid aside, and the nurse was holding the cord, without, she avers, making any traction on it, when the



mother gave a sudden movement to the side, and the umbilical cord, to the length of six or eight inches, came away in the nurse's hand. She felt anxious as to the escape of the afterbirth, but had not long to bethink herself what to do when the placental mass came down the vagina, and along with it the mis-shapen twin. She cannot tell how or when this body got detached from the

placenta. It was placed at once in the water in which the child already born had first been washed by another woman; and, as blood was escaping, the navel was tied with a piece of tape. As is customary among people of their class, the placenta, which had only a fragment of one cord attached to it, was burnt. The strange body was first buried in some out-of-the-way place, but was exhumed and brought to me on the sixth day afterwards, as I have said.

It was still in a state of good preservation, and presented in a very marked degree the features of the so-called fœtus acardiacus, or heartless fœtus. It consists simply of the lower part of the trunk and two inferior extremities. It measures $5\frac{1}{4}$ inches in length, $5\frac{1}{2}$ inches in breadth, and $2\frac{3}{4}$ inches in thickness from before backwards. The limbs are of unequal size, the right measuring at the broadest part of the fœtus 3 inches, and the left $2\frac{1}{2}$ inches in breadth. They each have the appearance as of a thick fleshy thigh, with a dimple deeper in the right than in the left at the knee, and terminating abruptly with only a stumpy constricted intervening leg in a mis-shapen foot. The right foot is turned so that the sole looks upwards and presents two digits which have rudimentary nails, and may stand for the great and little toes, with a space between them. The left lies folded in front of the other, with the sole turned inward and upwards. Two digits united together, but having each indications of nails, may represent the first and second toes; a small toe with a less marked nail grows a few lines apart at the outer side. The trunk is very short, and measures only $2\frac{1}{4}$ inches from the summit to the junction between the limbs. On the ventral aspect at its lower part, and slightly to the left of the middle line, can be seen the projecting umbilicus, open and with some coils of small intestines protruding from the opening. A fringe of membranes which has been torn off the placenta is still attached to the right and lower margin of it, and in this lower portion a bloodvessel of crow-quill size is to be seen. On the posterior aspect, a small fold of dark red skin is found in the fork between the limbs, attached to the right, but close to the fissure between them. It is evidently the indication of the attempted development of a genital organ; and, as the co-twin is a female, it probably represents the right labium or nympha. There is a small depression immediately behind it, which may represent either the vulva or the anus, but which admits a fine probe only to the depth of a line or two. Through the kindness of Professor Turner, the fœtus has been injected for me by Mr Stirling of the Anatomical Museum. The fluid introduced through the vessel already referred to passed freely into the body till all the cutaneous vessels became deeply injected, and also those in the walls of the protruded intestinal coils.

The central portion and the right limb only have been dissected, the left leg being left intact to show its original appearance. The

skeleton of the trunk is represented by an imperfect pelvis, in which the sacrum and coccyx are absent. The innominate bones are fixed together along the surface that corresponds to their usual sacro-iliac joint and the rough surface behind. The several sections of the bone are still distinct one from the other; the pubic portions being in the most rudimentary condition, and their bodies united by a broad intervening band of tendinous tissue. The neck of the thigh-bone is very short; otherwise the femur is well formed and articulates with the tibia at a knee-joint, of which the only marked peculiarity is the absence of the patella. The tibia and fibula are fixedly flexed to the femur at an angle of about 55° . In the foot we find the calcaneum proportionally large and fixed with the navicular bone; otherwise the tarsus and metatarsus are normal. The central metatarsal bone, however, terminates in a blunt point without articulating extremity. The first and second have articulated to them a single set of phalangeal bones; but these are broad as if composed of two sets fixed together. The same arrangement obtains in regard to the fourth and fifth.

The subcutaneous cellular tissue was remarkably cedematous, so that in making the dissection it was constantly necessary to wipe the cut surface with a sponge; and the limb, which before being cut into seemed plump and tense, became shrunk and shrivelled afterwards.

The gluteal muscles, and most of the muscles of the thigh and leg, can be recognised and dissected, but they all present a striking peculiarity—a peculiarity which I have not found noticed in other cases of this kind. For whilst their outline and arrangement sufficiently indicate their nature, instead of presenting the usual red soft fleshy appearance of muscular masses, they are of a dull yellow colour and firm consistence, and look as if made up of solid pieces of fat. On examination with the microscope, the usual outline of muscular fibres can be seen in them; but the transverse lines are absent, and on the application of ether the substance melts almost completely away.

The only viscera in the body are some portions of the intestinal canal. A piece of gut, four inches in thickness, which is clearly recognisable as the rectum, occupies the pelvis. It is closed inferiorly, and does not communicate with the depression observed in the cleft between the nates, though it can be traced close down to it. The upper extremity reaches up to the umbilical canal, within which it tapers somewhat suddenly to a thickness of only one inch. Here a bend takes place, which reminds one of the sigmoid flexure of the colon; and the rest of the intestinal tube, which protrudes through the umbilicus, is folded in convolutions, and ends in a blind extremity, which adheres by cellular tissue to the margin of the orifice. The upper part of the rectum and the narrow coils are invested with a serous membrane, which also lines the umbilical canal; but there is no distinct shut sac. Nowhere is there any trace of urinary or generative organs, with the exception of the fold

of very vascular skin already noticed on the inner posterior aspect of the root of the right thigh, and beneath this the cellular tissue is very deeply injected, and reminds one of the aspect of an erectile tissue.

The vascular arrangement is of the simplest. The bloodvessel into which the injection was thrown, and which I may speak of as the afferent vessel, and which opens at the lower margin of the umbilical ring, runs down the left side of the umbilical canal, accompanied by a slightly smaller and here empty efferent vessel, till it comes close to the middle of the left ilio-pectineal line. Here it throws off a branch to the left limb, and then travels round behind the bowel till it reaches the posterior part of the imperfect pelvic brim, when it turns abruptly downwards and forwards. As it travels along the right ileo-pectineal line, it dips under the efferent vessel to pass out of the pelvis towards the inner side of that vessel. This relation of these bloodvessels leads me to regard what I have called the afferent vessel as the vein, and the other as the representative of the arterial system, and the further distribution in the thigh confirms this idea. For at the groin the afferent vessel, which, as I have said, lies to the inner side of its companion tube, gives off a division which corresponds precisely in its distribution and relations with the external saphena, while the other portion goes down among the muscular masses along with the efferent vessel, to which it presents the ordinary relations of the internal saphena with the femoral artery. These venous tubes, indeed, are so far unlike the saphenous vessels that they are destitute of valves; but, on the other hand, the imperfectly-filled vessel which runs in the course of the femoral artery has thin walls, which more resemble those of the venous than the arterial system. This efferent vessel after crossing over the vein, as has been described, about the middle of the right side of the pelvis, sends a branch to supply the rudimentary intestines, which have been very deeply injected through it. This branch enters the intestinal tube at its posterior aspect, and just beyond it the main division is joined by the corresponding vessel from the left side, whence the short common trunk passes up the umbilical canal towards the umbilical aperture, in which it lies inferiorly to the larger and fully-injected afferent vessel. In this arrested body, also, we thus find the blood, such as it is, making its entrance by a vein, and escaping through an ill-developed artery.

The history and structure of this fœtus quite bear out the ingenious theory of Claudius¹ that, in this variety of monstrosity, we have to do with the arrested development of a twin whose umbilical vessels had acquired an anastomosis with the corresponding vessels of its more completely-developed neighbour. According to this theory, the twins are developed from a single ovum.

¹ *Die Entwicklung der herzlosen Missgeburten*, Kiel, 1859. Cf. Förster, *Die Missbildungen des Menschen*, p. 58.

Soon after the formation of the allantois, a bloodvessel of the one fœtus inosculates with a bloodvessel of the other. The streams of blood from the two hearts meet; that which comes from the twin with the stronger heart first arrests the course of blood in the other, and then causes a reflux of it towards the weaker heart. There coagulation of the blood and atrophy of this unused heart take place, and, whilst the heart of the stronger fœtus continues to send on the main current of its blood towards the placental villi, it sends also a side stream back into the body of its co-twin. This stream travels most easily through pelvic and femoral vessels; and hence it is that most of these acardiac bodies are more perfectly developed inferiorly than superiorly. This common imperfection of the upper part of the body has led to their being spoken of by some as Acephalous, or Headless. But the designation is not by any means satisfactory, seeing that, as in this instance, not only the head, but the whole upper part of the trunk, may be wanting; and, on the other hand, there are several instances recorded where the acardiac fœtus had little more than a rudimentary head, and was Acormous or Trunkless. Whatever be the form assumed by the arrested twin, the blood that circulates through it, entering by a single vein and escaping by a single artery, is blood that has already passed through the body of the better-growing fœtus. The nutrition is thus extremely imperfect; but few organs show traces of development, and even in these, the tissues present a low embryonic type of structure.

Part Second.

REVIEWS.

Lehrbuch der Geburtshülfe für Aerzte und Studirende. Von OTTO SPIEGELBERG, Professor, etc., etc.: Lehr, 1877.

Text-book of Midwifery for Physicians and Students. By OTTO SPIEGELBERG, Professor, etc., etc.: Lehr, 1877.

IT is nearly twenty years since we welcomed a text-book by the same author, then a teacher in Göttingen. That was a good book, but it attracted little notice. About the same time with it appeared the text-books of Tyler Smith and of Braun, both good for their time. All three have disappeared, and others have taken their place.

At present Schroeder's book is the favourite in Europe, and justly so. With us, Playfair's and Leishman's works have far

distanced their rivals in well-deserved popularity. These three are decidedly superior to the three mentioned in last paragraph. But now Spiegelberg, young, ardent, and active, produces an entirely new work, whose name heads the article; and which far surpasses any work hitherto published on Midwifery. It is an epoch-making work, which will long remain a standard in the obstetric library. No work shows so well as this how vast is the subject of midwifery, and how much learning and labour are required to bring the details together in a well-digested systematic form. The facts collected in this compose a mountain compared with the molehill known in the time of Roederer or of Smellie, and indeed far exceed any other collection; and Dr Spiegelberg has not only collected them, but considered, discussed, and arranged them. Few men have the wide learning and the scientific training to make this work possible for them; fewer still have the zeal and endurance necessary for the task. All praise to Spiegelberg, the great Professor of Midwifery in Breslau.

There are strong reasons for lamenting that Latin is not still the universal language of science; and this book naturally raises such thoughts, for how advantageous would it be that students everywhere should at once read this author's own words. The want of a common language has so separated the scientific growth of nations, that for each midwifery has a decided individuality distinct from that of its neighbours; and this circumstance renders a translation a very imperfect form of transference to the speakers of the neighbouring language. Of this we have an example in the instance of Schroeder, for we hesitate not to say that that manual did not meet with the reception it deserved in this country. It is certainly a stage in advance of any of our books, but that is surely no objection to it; the real obstacle to its just reception is that it does not fit into our growing individuality; it is always an outsider in our literature. We make these remarks with a view to ensuring for the translation of Spiegelberg a warm reception. The translation of such a great book will not be long delayed. If no one in Britain sets to it, some ardent American will do the work. We trust it will be thoroughly and well done, and to secure this, the rock on which Schroeder was hurt must be avoided. The translator must be one or a co-operative body, and such translators must do the whole, not a part; and must also be acquainted with the niceties of the recent progress of midwifery. In all these respects there was imperfection in the translation of Schroeder's volume.

The volume we are at present noticing is only the first half of the work. The second part involves the more difficult portions of the science of midwifery; but, judging from the first half, we look forward with impatience and no misgiving for the second. The whole will constitute a massive volume suited for advanced students, and there will be room for a condensed edition or manual

for beginners ; and we hope some qualified and authorized person will carry through such a desirable undertaking.

Spiegelberg's mind and style are quite adapted for the writing of a work to be received by students as authoritative. In some places he may be said to be too dogmatic, but this manner conduces to brevity and easy intelligibility. For instance, the modern department of heart and lung disease as complicating pregnancy and parturition, to which Spiegelberg has made original contributions, he settles far too absolutely. The matter is made too simple, more so than it really is ; for we believe that even Macdonald, whose elaborate work is now being slowly published in the *Obstetrical Journal*, will find that there are more elements to be studied in this great practical question than he embraces in his very carefully prepared view. In a like too dogmatic manner Spiegelberg cuts short the subject of prolonged pregnancy and of superfetation, whose occurrence is not negatived for us as yet by his and Kleinwächter's insufficient evidence and bold assertion. But we prefer to dwell on the great and admirable features of the work, such as the description of the diseases of the decidua and foetal membranes, the pathology of hemorrhage, etc.

[To show, if any one doubts, that we have read the book, we may point out a little error in a quotation from Ingleby, who does not make the extraordinary statement ascribed to him, as to the frequent recurrence of placenta prævia in successive pregnancies in one woman.]

Transactions of the American Gynecological Society. Vol. I. for the year 1876. Boston : H. O. Houghton & Co. : 1877.

It is not a trifling matter to be able to say of this volume that it is the handsomest of the kind anywhere produced. As of a man, so of a book, it augurs well to be tidy, clean, compact, elegant. The volume does not give the proceedings of the American Gynecological Society, but the transactions, that is, the papers considered worthy of being embalmed in this way ; and, if we refer to the proceedings, which found an appropriate place in the flying medical sheets of the time, we shall see that papers considered unworthy, even though bearing well-known names, have been ruthlessly subjected to the "massacre of the innocents." This method of dealing with second-rate articles is quite necessary, when we consider how much writing there is now which is destitute of evidence of work, or even of penetrating thought. Some may be offended by it, but it is really a benevolent function of editors, in which they require support in consequence of the petty difficulties it entails.

But this is not only an elegant volume, it is a good one ; creditable to the authors, creditable to the great republic. Our

American cousins have always excelled in all departments of practice. It is only recently that they have been coming to the front in science and in literature. The thin gruel of the late *Boston Gynecological Journal* has been supplanted by the more substantial viands of the *American Journal of Obstetrics*. Now we have the first of, we hope, a long row of volumes which will bear comparison with the transactions of European societies. Indeed, these must look to their laurels in this noble emulation.

In a book like the volume before us there are three things: observational, argumentative, and discussional work. The last is generally feeble and expressive of vanity. Argument is invaluable, but it must be good, well-founded, and in due proportion to observational work. No work is perfect, and we may say of this volume that we hope and expect that its successors will contain more observational work, less argumentative, and still less discussional.

La Médecine et ses Destinées, Leçon d'Ouverture du Cours de Pathologie Interne à la Faculté de Médecine de Paris faite le 20 Mars, 1877, par le Professor MICHEL PETER, Médecin de l'Hôpital de la Pitié. Pp. 23. P. Asselin: Paris, 1877.

THE two chairs of Medicine (*Pathologie Interne*), recently vacant in the Paris Faculty of Medicine, have been filled by physicians who are great favourites with the students, from the substantial character of their teaching and the graceful language in which they impart instruction. It is not too much to say of Professor Jacoud, that he is a high-class orator, a lecturer who captivates as well as instructs his audience. Professor Peter is also unquestionably an admirable speaker; but it is less by his eloquence than by the thoroughness of his clinical teaching, his accuracy in diagnosis, and his fertility of therapeutics, that he attracts crowds of students to his discourses in the amphitheatre, and to his more familiar lessons at the bed-side.

Professor Peter's introductory lecture, now before us, was (as we are told by the medical journals of Paris) a great success when delivered on the 20th of March. Many were unable to gain admission; and every place in the amphitheatre where there was room to sit or stand, was occupied as soon as the doors were opened. After acknowledging the hearty manner in which he had been received, Professor Peter said:—

“Gentlemen,—Three months have hardly elapsed since Dr Jacoud and I were added to the Faculty as professors. Six weeks only have passed since the memorable day on which Professor Jacoud, my colleague and my friend, stated to you the duties of a professor of internal pathology. He told you what internal pathology is, and explained to you the method which he proposed

to follow in teaching it. He entered into the driest methodological details, such as classification, with overflowing animation and impassioned eloquence, which, with you, I admired and applauded, but never dreamed of imitating. I need not repeat to you what he so well said. His method is my method; and we are both united in the one desire to do our duty and to be useful to you. Professor Jacoud, therefore, has singularly simplified my present attempt, by setting me free to discuss with you higher questions than those which relate to method, and allowing me to take a comprehensive view of medicine and its destinies."

Before entering upon the subject thus announced, Professor Peter returns thanks to the members of the Faculty for having "raised him from the ranks of a respectful disciple to the supreme honour of being a colleague."¹ He speaks with affectionate and yet discriminating eulogy of the masters to whom he was most indebted for his medical education and training—Gosselin, Cruveilhier, Monneret, Henri Roger, and Trousseau. He states that he completed his initiative medical training by serving as *chef de clinique* under the last-named illustrious physician. Here, in passing, we may remark, that a talent for clinical observation, and a therapeutic spirit similar to that which characterized Trousseau, are remarkably apparent in the writings of the new professor whose introductory discourse we are now reviewing.

The following remarks on Trousseau correctly indicate his place in the history of medical progress, and record a decisive incident in his brilliant career:—

"Trousseau was as little of a system-monger as Monneret; he was a most acutely observing physician, though some have called him a man of crotchets.

"It seems as if every form of eulogy had been exhausted, and as if everything had been said which could be said of this the greatest clinician of modern times. You know Trousseau as the naturalist—as the therapist—as the physician who was equally perfect in his knowledge of the pathology of infancy, of all other ages, and of general pathology; but, perhaps, there is one aspect of his genius with which you are not acquainted. *Trousseau was a surgeon*—a very able surgeon. 'One day there happened to me,' he said, 'a most embarrassing occurrence. At the close of a competitive examination, not without mark, I was nominated an *agrégé en médecine* of the Faculty of Paris; on the very same day I received my appointment as principal surgeon to the great hospital of Tours. I had therefore at once to decide whether to accept an immediate and certain income as a provincial surgeon, or whether to continue as a Parisian physician with the contingent

¹ The professors are nominated by the Minister of Public Instruction, who selects one from a list of three recommended by the Faculty. The first on the list is almost invariably nominated.

chances of a precarious future.' Trousseau adhered to medicine ; and you know the result of that adhesion !

" It was because he was a surgeon—because he was possessed of every professional aptitude—that he was so successful in introducing into ordinary medical practice two operations which had been previously regarded as exceptional and as belonging exclusively to surgeons—tracheotomy and thoracentesis. It was because he was a surgeon that he was able to describe with the most minute detail the stages of these operations, and guide by safe rules the hand of the operator. It was because he was a physician that he was able to follow up the operative details by formulating the indications and contra-indications, and to impart a medical character [*médicaliser*] to the new operations.

" It required a strong medical faith to persist in advocating tracheotomy in croup ; seeing that he began—not with one—not with two—but with twelve consecutive unsuccessful cases. This persistence was not the stubbornness of a theorist, but the full assurance of a man of genius.

" With similar clear-sightedness and similar manual security, he advocated the necessity and described the operative details of puncturing the chest in cases of pleurisy. He at once perceived and taught that the excessive quantity of the effusion was the sole and supreme indication which imposed upon the physician recourse to that operation. Certain untoward results of acting in opposition to that principle have demonstrated the medical wisdom of the great clinician of the Hôtel Dieu. This operation, which he made so easy for us, has been rendered still more easy by the process of *aspiration* applied to it by one of his youngest and most brilliant pupils, M. Dieulafoy. Ah ! how much happiness would this perfection of the operation of paracentesis have given to Trousseau, my dear master, whose mind knew not envy, whose heart glowed with tenderness."

Professor Peter describes with admirable brevity, and yet with wonderful completeness, what medicine was in its dawn, in its successive eras of hypotheses, and in its present state of advanced scientific development. From the rapid progress achieved in these later times, and particularly in our own day, he forecasts a glorious future. To attempt to condense his argument would be to spoil it. Commending it, therefore, for careful perusal as a whole, we shall discursively glance at some of the topics touched on by Dr Peter.

Medicine came into existence, says Professor Peter, when first a suffering man was met by a compassionate man : in that meeting germinated the art by which we, the physicians of the nineteenth century, are able to do so much for the alleviation and cure of the diseases of our fellow-men. For ages, the progress of medicine was impeded by foolish superstitions and ingenious system-

mongering. The supernatural was more in vogue than the natural: baseless theories in succession enthralled physicians and dominated practice: the application of physical science to clinical research was almost, if not altogether, unknown, till the comparatively modern times of Harvey, Avenbrugger, Laënnec, and the like.

"Pathological science did not always exist! We must come down to Morgagni, that is to say, to the middle of the eighteenth century, to see a worthy monument erected to that science and to medicine. Morgagni by his work, *De Sedibus et Causis Morborum PER ANATOMEN indagatis*"—*indagatis*, tracked out (is not the word expressive?)—realized the Galenical idea, the germ of which is contained in the treatise *De Locis Affectis*. Morgagni's work was published at Venice in 1762; and, as we shall see forthwith, it was at the same epoch, in the year 1760, at Vienna, that Avenbrugger published his treatise entitled, *Inventum Novum ex Percussione Thoracis*. Thus it happened, that pathological anatomy and the physical exploration of organs had their beginning at the same date. But more than half a century elapsed ere medicine associated these two elements of certainty to obtain a precision previously wanting. Nevertheless, the eighteenth gave sure signs of preparation for the nineteenth medical century. Then appeared Laënnec, who by his powerful hand changed at one stroke the medical axis, and at once caused the medical world to move in a new orbit."

Following a good exposition of the certainty of the information derived from auscultation and percussion, we come to a passage which thus announces the final extinction of the spirit of system-inventing in medicine.

"Do you imagine that the final triumph of the modern medical spirit was easily obtained? Do you imagine that there was no struggle—no desperate struggle? It was Broussais who raised the war-cry—*Breton contre Breton*. The contest was obstinate; it was not the struggle of two men, it was the future fighting with the past; the old in opposition to the new world of medicine—the spirit of system in rebellion against the spirit of observation. The spirit of system was vanquished, and the law of truth was victorious. With Broussais, the representative of the old world of medicine, disappeared for ever *la médecine de théorie, la médecine de système, la médecine d'a priori, la médecine d'hypothèse*. Between Laënnec and Broussais—contemporaries—there was a space of two thousand years. With the latter, the old world of medicine expired in a riotous agony—with the former began the new era, radiant, and full of promise."

The amplitude of promise did not fail. Instruments of physical exploration, of vast utility, were introduced in rapid succession—the speculum, the laryngoscope, the ophthalmoscope, the endoscope, the sphygmograph, the thermometer, and the dynamometer. The

history of the introduction of each of these instruments is rapidly sketched by the lecturer.

Clinical thermometry is spoken of as if it began with Bouillaud. A much earlier teacher, Dr James Currie, is not even named. The merit of having first employed clinical thermometry on a large scale belongs to Currie, a Scotchman, a medical graduate of Edinburgh, a man who was far in advance of his age as a clinical physician. He was born in Dumfriesshire on the 31st May 1756, and died on the 31st August 1805. He had a successful professional career in Liverpool, where he settled in 1781. His medical writings give him an honourable place in the history of medicine; and his claim to be regarded as a man of benevolence and great general accomplishments is established by his edition and criticisms of the works of Burns, Scotland's darling poet. His biography edition of Burns, undertaken for the benefit of the poet's widow and children, realized £1400.

Currie's best known medical work, published in 1797, is entitled—*Medical Reports on the Effects of Water, Cold and Warm, as a Remedy in Fever and other Diseases*. Thermometrical observation is a leading feature in those admirable clinical reports. His manner of taking temperatures is thus described at pages 35 and 36 of the first volume of the fourth [1805] edition:—"In taking the heat of the patient, I have generally used a small mercurial thermometer of great sensibility, with movable scales, made for me by Mr Ramsden, after a form invented by the late Mr Hunter, and used by him in his experiments on the heat of animals, and I have introduced the bulb under the tongue, with the lips close, or under the axilla—indifferently—having proved by repeated experiments that the heat in these two places corresponds exactly, and gives a just indication of the heat of the surface of the body, where sheltered by the necessary teguments from the contact of the external air. Finding, however, considerable risk in using the straight-tubed thermometer in contagious diseases, I got some instruments of this kind made with a small bulb, and curved at the end. The bulb being introduced under the tongue or axilla, the observer can stand behind the patient, and mark the rise of the mercury without coming into the immediate sphere of his respiration. Though no injury has in any case been incurred from the use of the thermometer, yet a further improvement has suggested itself. By introducing a *small piece of air* into the tube, after the manner of Mr Six, a permanent indication of the greatest heat is obtained, and the approach of the observer towards the patient during the experiment is rendered unnecessary."

The passage which we have now quoted interestingly describes the way in which Currie took the temperature of his patients. It also shows—particularly when taken in connection with the following "Medical Report"—how far before his time he was as a clinical observer. The case occurred, be it noted, in January 1790,

eighty-seven years ago!—"A nurse in the fever-ward of the infirmary, having several patients under her care, caught the infection. She was seized with violent rigors, chilliness, and wandering pains, succeeded by great heat, thirst, and headache. Sixteen hours after the first attack, her heat at the axilla was 103° F., her pulse 112 in the minute and strong, her thirst great, her tongue furred, and her skin dry. Five gallons of salt water of the temperature of 44° F. were poured over her naked body at five o'clock in the afternoon, and after being hastily dried with a towel, she was replaced in bed. When the agitation and sobbing had subsided, her pulse was found to be at the rate of 96 strokes in the minute; and in half an hour afterwards, it had fallen to 80. The heat was reduced to 98° F. by the affusion; and half an hour afterwards it remained stationary. The sense of heat and headache were gone; and the thirst was nearly gone. Six hours after, she was found perfectly free of fever; but a good deal of debility remained. Small doses of colombo were ordered, with a light, nourishing diet; and for several days the cold affusion was repeated at the same hour of the day. As at first, the fever never returned."

Currie records numerous observations which he made in relation to temperature in the diagnosis and prognosis of fevers; and he tells us how he tested the action of cold and warm baths, of opium, of alcohol, and of low diet, on the heat of the body. He says:—"A careful attention to the changes of the animal heat, and to the state of those functions on which it depends, and by which it is regulated, though more requisite in febrile diseases, perhaps, than in others, is, however, of importance throughout the whole circle of diseases."

We have said more than enough to show that Currie's name ought to have appeared in preference to that of Bouillaud in Dr Peter's little paragraph on clinical thermometry. The following is the paragraph to which we refer:—"Le thermomètre avec lequel Bouillaud recherche, des 1836, la température fébrile, devient avec Wunderlich un indispensable instrument de précision médicale." The non-acceptance of the thermometer as an indispensable instrument of precision more than eighty years ago was not the fault of Currie but of his contemporaries. In giving Currie his deserved meed of praise, let us be just to his predecessors. Currie was neither the inventor nor actually the *first*—though certainly the *first real*—teacher of clinical thermometry. In an imperfect manner it had been employed and described before his time by Van Swieten and De Haen, pupils of Boerhaave, and afterwards clinical professors at Vienna. They both used portable Fahrenheit thermometers to ascertain the temperature of their patients. Laënnec, in the same way, was the re-discoverer—not actually the inventor—of auscultation. He himself tells us that he derived valuable information on the subject from the writings of Aretæus and Hippocrates. Of the latter he says:—"Hippocrate avait tenté l'auscultation immédiate."

Nevertheless, it is correct to say, we owe to Laënnec the aid we derive from auscultation in the diagnosis and treatment of intrathoracic disease; and that we are also indebted to him for the spirit which has led to the invention of various instruments used in clinical exploration.

Dr Peter thus expresses himself—forcibly and in the main correctly—regarding the relation, at the present day, of medicine to the sciences:—

“We have thus seen the extent to which Medicine has become scientific. Yet, by a strange denial of justice, into which there enters perhaps as much of envy as of error, some refuse to admit that Medicine is a science. Well, then, to-day I make a most audacious claim. I not only say that Medicine is a science, but that she is the mother of nearly all the sciences which have the weal of man for their object: I say that she has as her offspring anatomy, physiology, hygienics, and practical physics, so that in some languages the word *physic* still signifies *medicine*, the mediciner being called a *physician*. I say that medicine begot anatomy and physiology. The synthesis preceded the analysis. The study of the sick man came before the study of the healthy man. The desire to be useful gave birth to the desire for knowledge.”

Is it correct to describe Medicine as the mother of the practical physical sciences? It seems more accurate to say that she has helped to perfect them, and has made some of them—such as optics, acoustics, chemistry, and botany—her auxiliaries. Indeed, the Medicine of to-day is—*The application of all the sciences to the alleviation and cure of suffering and disease.*

Let us say, in conclusion, that the elegance, wholesomeness, and enthusiasm of the language of Professor Peter indicates that the position to which he has been raised will have a powerful influence for good on medical education and medical faith in France. The only considerable criticism which we have to make on his introductory lecture is that physiology is not brought sufficiently before the students. We admit with Dr Peter that “the nineteenth century is the first century of the new medical era—the first age of scientific medicine;” but we do not agree with him that it will justly bear in history no other name than “*le siècle de Laënnec.*” British physicians, at least, will say that it is not only the century of Laënnec, but also of Charles Bell and Marshall Hall.—J. R. C.

The Hunterian Oration, delivered in the presence of His Royal Highness the Prince of Wales at the Royal College of Surgeons of England, on the 13th of February 1877. By Sir JAMES PAGET, Bart., F.R.S., D.C.L. Oxon., LL.D. Cantab.; Sergeant-Surgeon to the Queen, Surgeon to the Prince of Wales, Consulting-Surgeon to St Bartholomew's Hospital. Longmans, Green, and Co.: 1877.

MANY eloquent and instructive Hunterian orations have been delivered, and some of them—notably those by Sir William Lawrence in 1833 and 1845, who looked, and was the consummate orator and rhetorician—were very memorable in some respects; but we doubt if the same care and the same judicial consideration have been previously expended in preparing them as Sir James Paget's oration exhibits, on a leisurely perusal. In truth, he seems to leave very little to be done by his successors in office; the field appears as if every stalk of wheat had been gleaned from every corner. The original address delivered at the College of Surgeons is supplemented by fifteen notes, occupying nearly as many pages as itself. Some of these notes are extremely interesting, and succeed in enabling us to realize John Hunter, both as an enthusiastic student of nature and as a man, more satisfactorily and thoroughly than we have ever done before. We are favoured, also, with comparative sketches and estimates of his more distinguished contemporaries in the surgical world, Cheselden, Bronfeild, Samuel Sharp, and Percival Pott, which bring out his special gifts and characteristics in broad relief.

We question if John Hunter has been so clearly understood and appreciated by any previous writer, or, at least, if the conceptions regarding him have ever been so well and accurately put into language. Sir James Paget possesses what the subject of his oration wanted—the power of expression.

Speaking of Hunter's attempt to answer the question, "What is life?" he says:—"Hunter strove for an answer to it, and his opinion greatly affected his pursuits, and, much more, for a time, his influence and his reputation in medical science. He spoke of life as a 'vital principle,' a something separate from organization; and, although he spoke also of a *materia vitæ diffusa*, and of a *materia vitæ coacervata* in the brain, yet I cannot doubt that he meant something that was not material, or a mere property of matter. I believe that he intended by his 'vital principle,' that which Joseph Henry Green, the most philosophic and eloquent of his interpreters, held—'a power anterior in the order of thought to the organization which it animates, sustains, and repairs; a power originative and constructive.'

"But Hunter could not clearly express this, and, I believe, he could not clearly think it. For it cannot be denied that, on this and some allied subjects, he wrote very obscurely—so obscurely and

so variously, that, when we have granted all we can for the common difficulty of finding words for profound thoughts, and all we justly may for our own defects of apprehension, we cannot but believe that his mind was not clear upon them. And this I believe we may refer to one of the few intellectual defects that can be traced in him—namely, the great inequality of his powers in language and of thought.

“In every mind, thoughts and words are so interwoven, that each shares always the qualities of the other. Thoughts and words are like mutual reflectors; if either of them distorts an object placed between them, the other cannot but receive the distorted image and reflect it, or each is alternately master and servant. Now, thought employs words for its expression, and then these same words take part in directing the next thought. If either be defective or erroneous the other suffers.”

In concluding this short notice of a work eminently worthy of being read and pondered, we shall quote the summing up of the author's estimate of John Hunter:—“After having studied Hunter's life, and all his defects of temper and of general culture, of social skill, and all the arts of pleasing, nothing has seemed clearer than that the power of a great intellect, with a strong will and a right aim, is in the competition of life sufficient and irresistible, and that among all the intellects and wills that I have studied not one was stronger than John Hunter's.”

On Idiocy and Imbecility. By WILLIAM W. IRELAND, M.D. Edin., Medical Superintendent of the Scottish National Institution for the Education of Imbecile Children at Larbert, Stirlingshire; Author of the “History of the Siege of Delhi,” “Studies of a Wandering Observer,” etc. London: J. & A. Churchill, New Burlington Street: 1877.

WE have read this book with much interest and satisfaction. It is the work of an accomplished writer, an author already favourably known to the general public, whose professional zeal, in union with his benevolence, have found a congenial field of study among the unfortunates of a large institution, for the physical and moral amelioration of idiots and imbeciles. He has manifestly spared no pains in collecting, arranging, and lucidly conveying his information. The works of previous writers on the various departments of this subject have not only been read but intelligently scrutinized. No statements are adopted without being traced to their original source; and in not a few instances, time-honoured opinions and *quasi* facts are unceremoniously rejected. This gives confidence to the reader and enables him to persevere from chapter to chapter of a large octavo volume of more than four hundred pages, with the comfortable assurance that the contents are reliable, and that his

time is profitably occupied. We may say, once for all, that the book is well written, and the style accurate; while the tone of feeling which pervades it indicates most unmistakably that the author's scientific zeal is sustained by a real desire to improve the physical and moral condition of the children under his charge. No expense has been considered in the preparation of this book, which is profusely illustrated by tables, charts of genealogy, and wood engravings.

The first chapter defines what is meant by Idiocy and Imbecility. "Idiocy is mental deficiency, or extreme stupidity, depending upon mal-nutrition, or disease of the nervous centres, occurring either before birth or before the evolution of the mental faculties in childhood. The word imbecility is generally used to denote a less decided degree of mental incapacity." In the next chapter, the statistics of Idiocy in various countries are given, with judicious remarks as to the accuracy and reliability of each. The causes and classification of Idiocy occupy chapters iii. and iv. The classification recognises ten varieties, each of which occupies a chapter. These are: genetous idiocy; microcephalic; eclampsic; epileptic; hydrocephalic; paralytic; cretinism; traumatic idiocy; inflammatory idiocy, and idiocy by deprivation. The chapter on microcephalic idiocy is interesting and suggestive. The following remark is very important:—"In considering the mental powers in relation to the material organs of thought, we have to keep in view not only the size of the brain, but the complexity of the convolutions and their connections with one another, the commissures which join the two hemispheres, the amount of the gray matter, the general sensibility of the nervous system, the nature of the blood, the temperament and the general vigour of the constitution—for all these go to make the sum mount, and a deficiency in any of them may cause the harmony to jar. It will be presently seen that the study of microcephaly throws light upon this somewhat obscure field of inquiry."

After a statement of the measurements, Dr Ireland sums up in these words: "I think we may therefore assume, that below seven-teen inches in circumference, the manifestations of intellectual powers would be feeble. But heads of this small scale are rare even amongst idiots, for idiocy is generally the result of disease, not of smallness of the brain."

"Idiocy by deprivation means that condition of mind in which a child remains who is deprived of two or more of the principal senses—such as sight and hearing. This condition, if not idiocy, simulates it so closely, that it is needful to say a few words about it. As is finely stated in the aphorism, quoted by Sir William Hamilton, '*Cognitio omnis a mente primam originem, a sensibus exordium habet primum.*'"

The most interesting cases are those where a human being suffering from deprivation of two or three senses has one of them

suddenly restored. A well-known instance of this kind was James Mitchell, who was born deaf and blind, but who suddenly gained his eyesight on being couched for cataract.

As idiots, properly so called, may also want one or more of the principal senses, it must obviously demand both acumen and skill to discriminate from them cases like those of Mitchell and Laura Bridgman, where the *mental* faculties are really perfect.

There is a good chapter on the sensory and mental deficiencies of idiots; and this is followed by another—the most important practically—on “The best methods of Educating Imbeciles and Idiots.” Our space forbids more than a simple reference to it; but it will repay a careful perusal.

It is well known that idiots and imbeciles are sometimes endowed with a special aptitude—for music perhaps, or some mechanical art. With reference to this Foderé remarks: “That probably arises from a more perfect organization of the organ on which such-and-such an art depends, and not on the general understanding.” Dr Ireland, commenting on this, says: “The occurrence of special talents in idiots does not on the whole prove any more for the specialization of the faculties in the different parts of the brain, than the occurrence of special talents in sane individuals.” No; but surely it renders the probability of such specialization very great; and *post-mortem* examinations in the case of persons in other respects imbecile might decide the question beyond dispute. There is a useful chapter on the Laws for Imbeciles and Idiots, which cannot fail to be both useful and interesting to many.

Notes on Asylums for the Insane in America. By JOHN CHARLES BUCKNILL, M.D. London, F.R.S., etc. London: 1876.

DR BUCKNILL'S notes have already appeared in the *Lancet* of last year. We have found them very pleasant reading. Being compelled by bad health to seek a change of air and scene, Dr Bucknill paid a visit to some parts of Canada and the Northern States of America. During this tour he visited a number of asylums. Though he finds much good in many of the American asylums, the general tenor of his remarks is unfavourable; and as criticisms of this kind are keenly resented by the citizens of the United States, it is likely that Dr Bucknill would not have published his strictures at all, had he not fondly hoped that the American superintendents would accept the remedies he proposes. These are the entire abolition of instrumental restraint, and a central board of lunacy. On these points, especially the first, there is an affectionate eagerness about Dr Bucknill's appeal to his American brethren which reminds us of Burns's “Address to the Deil”—“Oh wad ye tak a thocht and mend.” The energy of the Ameri-

cans, the great diffusion of education in the States, the absence of brutal offences even amongst the poorest, are all skilfully used to relieve the dark shading of the picture of their asylums. We have never been in America; and when such an experienced and able observer as Dr Bucknill tells us, that there is so much wrong with the treatment of the insane in the New World, we are disposed to advise the Americans to look to it, even although as it appear their critic has made some mistakes in details. At the same time, we believe the Americans are right in saying that there is a reaction in England against the system of non-restraint, *i.e.*, against the absolute prescription of all instrumental restraint as a thing bad in itself, and never justified by circumstances. That the American physicians may resort too often to mechanical restraint is quite another question.

Dr Bucknill offered to lay a wager that any American superintendent might go through all the public asylums in England for a month without finding a single patient under any form of mechanical restraint. If this be so, and Dr Bucknill has very good means of knowing the real state of the case, we are disposed to think that Dr Walker has given the right solution when, in recalling his experience in England, he said "that the superintendents lay the blame of non-restraint upon the Commissioners in Lunacy, and the Commissioners in Lunacy throw it back upon the superintendents. They say the superintendents are emulous one of another to report the smallest number of restraints during the year."

It is the result of our own intercourse with English superintendents that the most intelligent of them consider mechanical restraint advisable in a limited number of cases, and that the superintendent, and not the travelling Commissioners in Lunacy, are the best judges when such treatment should be adopted. It is likely enough that Dr Bucknill's official position may have stood in the way of knowing the real state of opinion in England.

It seems to us that as lunatics are individuals deprived of their liberty by the action of the state, that there should be officers appointed to visit the asylums, and see that the patients are neither neglected, ill-used, nor unjustly detained; but we are by no means sure that the Commissioners in Lunacy do not sometimes do harm in trying to substitute their own views of treatment for those of the medical superintendents, and in meddling with small matters of administrative detail. What is the use of talking of the great confidence which the English have in their asylums, when a Parliamentary Commission is sitting at present to inquire into the action of the lunacy laws? and if the Americans erect central lunacy boards for their several States, we advise them to avoid some of the faults which have appeared in those of the United Kingdom.

Hospital Organization. By CHARLES WEST, M.D. London : Macmillan & Co.

To all earnest workers in hospitals, this book will impart the welcome sense of sympathy proceeding both from love of the objects of these charities, and a thorough comprehension of the principles and details of their management. The writer's enthusiasm in the cause of the relief of the sick poor, has led him not only to advocate and support the institutions provided for that purpose, but to study the machinery of them with a very perceptible longing after perfection in their organization.

It would be well if all those who are nominally managers of hospitals took up their responsibilities with Dr West's views of their powers and duties. His clear exposition of the three divisions of hospital interests—the medical, the nursing, and the economical—would be a great help to their understanding of a really difficult and complex subject, and not the less so that in studying the details, they might see reason to differ from him on some points. His suggestions with regard to dietary, laundry arrangements, and the out-patients' department are very valuable, but the greater part of the book is occupied with the subject of nursing. The relative value of lay and religious systems is discussed, the preference being given to secular administration. That being granted, views are laid down as to the qualifications of candidates and their training, and the relation of the nurses in their different offices to each other, which seem to us very sensible. Dr West takes a desponding view of the training attainable in most hospitals. He would be as much gratified as surprised to know how much is done for the nurses in the direction he points out by some of the surgeons and physicians of the Edinburgh Royal Infirmary. His horror of the action of caste prejudices in a nursing community commands our sympathy, though, from the frailty of human nature, there will always be a difficulty in hospitals as elsewhere of enforcing the precept which carries as its reason, "for all ye are brethren." His injunctions in this respect would have more weight if made with reference to a common duty of Christian life than with restricted application to a particular body of people. There is a fine picture drawn of the possibilities included in the office of superintendent of nurses. We agree with him both as to his aims and restrictions for her, except that, hedged in with all needful regulations for her guidance, we would impose upon her the appointment as well as control of the nurses. A woman will be fit for neither, or both, and her unfitness could be remedied only by her removal, and the substitution of a person with the necessary judgment. Dread of the encroachments of the superintendent of nurses is rather a feature of the book, which otherwise draws a picture as loving as minute of the different members of the nursing party, and seems to point the moral that, in the as yet somewhat

new work of ruling, women have not been trained up to its high requirements. But one who has tried ruling, knows how little room there is in it for an arbitrary will, and how hard it is in reality to carry through what one is required to effect. And a superintendent who is otherwise fit, will soon be cured by sore experience of any desire to exceed the scope of her duties.

Hospital Organization should be studied and kept as a textbook by all who have to do with either the arranging or the administration of a hospital.

A New Artificial Membrana Tympani. By LAWRENCE TURNBULL, M.D., Surgeon to the Department of Diseases of the Eye and Ear, Howard Hospital, Philadelphia, etc., etc.; Medical and Surgical Reporter, Philadelphia; 23d December 1876.

IN the artificial drumhead of Mr Toynbee, we frequently had the disk of guttapercha remaining in the external auditory meatus, the stem alone coming out when attempting to remove the aid to hearing, for cleansing or renewal. Dr Turnbull's improvement consists in making the stem of steel, instead of silver as in Mr Toynbee's, and surrounding the entire disk with a rim of the same material from which the stem arises. The rim will require to be made to fit the external auditory meatus of the patient by the instrument-maker, as in the case of the artificial drumhead of Dr Beverhout Thompson, described in the *New York Medical Record* for 24th April 1875. Dr Thompson made his disk of gold-beaters' skin, and the rim and stem of silver. In the *Monatschrift für Ohrenheilkunde* for April 1877, just to hand, Professor Dr Josef Gruber, of Vienna, figures and describes, with the forceps for its introduction, a new artificial membrana tympani made of linen cloth. This has the advantage, after being softened with glycerine and water, or a medicated solution useful in the treatment of the case, of adapting itself more to the inequalities of the destroyed natural membrana tympani than the guttapercha drumhead of Mr Toynbee or those of Drs Turnbull and Thompson. If we have a perforation, say in the upper posterior quadrant of the membrana tympani, through which we can see the long process of the incus, the softened linen is pressed in beyond the edges of the perforation, thus coming in direct gentle contact with the long process of the incus, the waves of sound bear immediately upon the chain of bones. This artificial membrana tympani, like the ball of cotton-wool so used by Mr Yearsley, allows the direct application of substances suited to the treatment of the case.

One or other of the new artificial drumheads here noticed, may be useful in restoring hearing in cases of partial or total loss of the membrana tympani. The aural surgeon will be able to guide the sufferer to the one he needs.

First Contribution to the Life-History of Contagium. By P. M. BRAIDWOOD, M.D., and FRANCIS VACHER. (*British Medical Association Scientific Reports.*) 1876.

THE British Medical Association has done good service by devoting a part of its surplus funds to the encouragement of scientific research. The medical public has already profited by the publication of two of these reports, the one now before us and the very elaborate and eminently practical results of Professor Rutherford and M. Vignal on the secretion of bile and the action of cholagogues. This first report on the life-history of contagium is very largely taken up by introductory matter, citing and discussing the labours of other workers in the same field. The nature of contagium is first indicated, its mode of generation, and how it is communicated, and the conditions on which the life or activity of contagia depend are treated at length. The authors in their own investigations tried the effect of certain germicides on the vitality or activity of the vaccine contagium. The memoir is illustrated by four monochrome plates with drawings of sections of the skin of a vaccinated heifer. The animal was vaccinated in several places, and daily a vaccinated area was cut out and examined microscopically, a record of the histological changes in the vesicles of which being thus obtained from day to day. We notice that the pieces of skin so excised were hardened in alcohol, and then stained with carmine—not a very good method. Had chromic acid, or chromic acid and alcohol, or, better, osmic acid been employed, the details of the changes would have been very much better preserved. As it is, the plates are very suggestive of the liberal use of carmine, and we cannot say that we regard them as highly artistic pieces of histological work. For the description of the changes occurring in the skin after vaccination we must refer to the original. The authors deserve the thanks of the medical profession for having undertaken this work, and we hope that their example and their success may stimulate some of our younger practitioners, who, more especially at the outset of their professional career, have plenty of unoccupied time on their hands, to benefit themselves and humanity simultaneously by devoting this unoccupied time to some scientific or directly practical purpose. With the British Medical Association ready to grant money for the prosecution of any scientific subject bearing on practical medicine or surgery, there ought to be a readiness on the part, more especially, of the younger members of the profession to embrace this opportunity.

Du Darwinisme ou l'Homme-Singe. Par le Dr CONSTANTIN JAMES, Ancien Collaborateur de Magendie, etc., etc. Paris: E. Plon et C^{ie}, Editeurs: 1877.

THIS is a sparkling and witty attempt by a French physician to determine the rights and wrongs of evolution as propounded by Darwin, and to satisfactorily answer the great problem of problems: "Whether has man sprung from the monkey or from mud?" Unlike many writers in our own language, the author does not confine himself to the discussion of one or two salient points in Darwinism, but boldly advances, in his little treatise of some three hundred pages, to the demolition of evolution as a whole. For our author is a thoroughgoing antagonist to Darwin, *et hoc genus omne*, and proves himself to be an uncompromising, if, at times, a somewhat illogical, opponent of the development theory. His ideas of this theory, and his attitude towards doctrines which claim Darwin as their more special progenitor, may be gathered from the following extract:—"Le Darwinisme, en nous faisant dériver du singe, et en nous ravalant de la sorte aux proportions de la brute, ne fausse pas seulement notre origine, il fausse également la notion de nos devoirs dans ce monde et de nos destinées dans l'autre: c'est au point que son triomphe équivaldrait à une véritable dislocation sociale. Je me suis donc cru obligé, ayant en main les documents voulus pour démontrer que ce n'est qu'une PSEUDO-SCIENCE, de les faire connaître, et de les présenter sous la forme qui m'a paru la plus propre à en vulgariser le sens et la portée." Thus boldly and energetically does the author denounce the "science falsely so-called," which he esteems Darwinism to be.

Unfortunately for his cause, the author does not produce many, or indeed any, facts of importance to invalidate Mr Darwin's views. His style is that of the popular gesticulative *savant*, interspersed with many questions and exclamatory phrases, which with us pass for nothing in the sober literature of science. After quoting, for example, from Darwin's "Descent of Man," the statement that the early progenitor of the vertebrata was liker an ascidian larva than any other known form, the author exclaims—and we shall give his words in his own vernacular—"Les larves des ascidiens! Mais qu'est-ce qu'une larve? Je copie la définition qu'un donne le dictionnaire d'Histoire naturelle. 'LARVE: Insecte, tel qu'il est sortant de l'œuf, et vulgairement appelé *asticot*.' Quelle chute, grand Dieu! LE GENITEUR UNIVERSEL UN ASTICOT!" From which it appears that Dr Constantin James gives to Mr Darwin's use of the word "larva" a meaning of his own, and then retreats metaphorically in dismay from the "*asticot*" of his dictionary.

The work before us hardly merits serious scientific criticism, even in a country where it is not likely to be widely read. That it will serve in the land of its author to confirm well-meaning but

unscientific people in their abhorrence of "l'asticot" as a far-back progenitor may be readily believed; that it will in any degree weaken the development-theory, is a contingency of the most unlikely and remote kind.

The Treatment of Spina Bifida by a New Method. By JAMES MORTON, M.A., Professor of Materia Medica, Anderson's University, Glasgow, etc., etc.

DR MORTON deserves the thanks of the profession for his observations and successful treatment in connection with spina bifida—a disease which has always been considered a most unsatisfactory one for any operative interference. Dr Morton gives the following rules as important:—“(1) The child should be in a thriving condition; (2) Make a tentative puncture with a grooved needle; (3) Draw off not more than half of the fluid contents; (4) Carefully close the puncture, by collodion or otherwise, so as to prevent further escape of fluid; (5) When proceeding to inject, use a trochar with canula of a medium size, not too small, otherwise the glycerine solution will not run readily through the canula; (6) The parts must be carefully handled and protected by the nurse, and the injection repeated if required.”

The formula for Dr Morton's glycerine solution is:—

R Iodi. gr. x.
Potassii iodidi, gr. xxx.
Glycerine ʒi. M.

From half a drachm to two drachms of this solution is to be injected according to the size of the tumour.

In puncturing the cyst, Dr Morton prefers a point at the upper part, and a little to one side of the middle line.

We sincerely congratulate Dr Morton and the other gentlemen who have practised this method, on their good results; and, as a consequence of their successful experience, we look forward with more confidence to the future treatment of this disease.

We cannot, however, congratulate the author on the beauty or usefulness of his illustrations, and would be glad, if any second edition of his book is published, to see them removed altogether or much refined in their character.

An Atlas of Topographical Anatomy. By WILHELM BRAUNE, Professor of Anatomy in the University of Leipzig. Translated by EDWARD BELLAMY, F.R.C.S., Senior Assistant-Surgeon to the Charing Cross Hospital. J. & A. Churchill: London: 1877.

NOT merely anatomists, but the profession at large, are laid under a deep obligation to Mr Bellamy for placing within their reach a

translation of Professor Braune's admirable Atlas of Topographical Anatomy. It is impossible to estimate fully the great value of this work. To the surgeon it will be useful in so far as it will enable him to determine at a glance not only the exact relationship which the various parts he may have to operate upon, bear the one to the other when undisturbed by dissection, but also the organs implicated by the track of a bullet or of a punctured wound. To the anatomist it is especially valuable because it furnishes him with accurate plates representing plane sections of the frozen body by means of which he can extend his knowledge of the position of the different organs to each other, and study his subject from a different point of view than is obtained by ordinary dissection.

The plates of Professor Braune's Atlas are reproduced from his original figures which are the size of nature, but on a smaller scale by means of photography, and we cannot speak too highly either of the clearness with which the various parts are delineated or the artistic effect which is produced throughout. The method adopted in their reduction has imparted to them a peculiar softness which is very pleasing to the eye. To each plate is appended a special text, but the real value of the work lies in the plates and not in the letterpress, which is written in a somewhat heavy, uninteresting style, and contains little that is absolutely new.

It is marvellous how much can be learned by a close inspection of the first two plates, which represent a sagittal section through two bodies—a male and a female. But perhaps we should explain briefly the method which the author adopted in making these sections. The bodies being laid upon a horizontal board, and the limbs arranged symmetrically to the mesial line, they were subjected to a low temperature and thoroughly frozen. He then marked out the mesial line before and behind by means of black chalk, and the section was made by a saw “much in the same way as two workmen would saw the trunk of a tree.” The two plates taken from these sections give an admirable conception of the relation of the viscera not only to each other, but also to the parietes; and these are points which, although they are slurred over in many anatomical books, and even stated inaccurately in others, are yet of high importance. Looking at Braune's plates, it will be seen that the upper margin of the manubrium sterni corresponds with the lower part of the body of the second dorsal vertebra, and that the arch of the aorta does not reach higher than the fourth dorsal vertebra (a little higher in the plate representing the section of the female). Now, with the exception of Turner's “Introduction to Human Anatomy,” and Heath's “Practical Anatomy,” the aorta is spoken of in our text-books as reaching the spine at the level of the second dorsal vertebra, which is a grievous error. Dr Wood, in a very carefully written paper which appeared in the *Journal of Anatomy and Physiology* some years ago (November 1868), drew attention to this, but still in the last edition of our chief work on

anatomy the error has been reproduced. That this mistake should ever have arisen, and should still in so many cases be perpetuated, is perhaps due to many anatomists having a wrong conception of the exact position of the upper margin of the sternum. They forget that the first rib slopes obliquely downwards and forwards from the spine and is not horizontal, and consequently that the upper margin of the manubrium is thrown opposite the second dorsal vertebra. If things were as our text-books put them, it would follow that the highest part of the aortic arch would lie at a higher level than the superior border of the sternum, which is absurd. Of course, as Braune points out, the position of the aorta, in relation to the parietes, is not always exactly the same in different bodies. In youth and age the greatest difference is perceivable, but this is never more than the depth of the body of one vertebra. In the young, the diaphragm after death, owing to the greater resiliency of the lungs, assumes a higher position than in the old, and consequently in the definition of the position of the aortic arch and thoracic viscera the age of the individual must be taken into account.

Next examining the trachea, we observe that it bifurcates into its two bronchi opposite the fourth dorsal vertebra in both sections. This also is a point in which anatomical works are somewhat at variance, but in this case the variance is not due to error but to the difference in the place of division in different bodies. Quain, Ellis, and Holden, describe it, and Pirogoff figures it, as occurring opposite the third dorsal vertebra; whilst Henle and Heath state that it bifurcates as low as the fifth dorsal vertebra. All unite in giving the fifth cervical vertebra as the point at which the trachea begins, and this unanimity might lead one to think that here at least there can be no possibility of error. Certain it is, however, that in the drawings of both Braune's sections the larynx lies opposite the fifth cervical vertebra, and the trachea begins opposite the sixth cervical vertebra. This relation, however, must be constantly changing with the movements of the head, and also to a small extent in the process of deglutition. In both plates the manner in which the trachea sinks from the surface as it descends is very characteristic, and the tracheotomist can obtain many useful hints by a study of its relations as figured by Braune. In the letterpress some interesting remarks are made upon the extensibility of the trachea. The author points out, that the various movements of the head are accompanied by a corresponding lengthening or shortening of the tube due solely to the elastic tissue between the cartilaginous rings, and that by this provision dislocation of the roots of the lungs is prevented.

The short distance which is represented in both plates as existing between the abdominal parietes and the vertebral bodies at the level of the umbilicus is very remarkable, and suggests the ease with which the aortic flow of blood might be arrested at this

point by the abdominal tourniquet. In drawing attention to this point, however, the author explains that the state of affairs is not the same as in the living body, because after death the diaphragm takes the position of expiration, and is consequently at its highest level. In the section of the female, the distance was still less than in that of the male, and this although the uterus contained a foetus of two months.

The position which the male bladder is represented to hold is altogether different from that which is usually assigned it. The author states that after the section was made, this viscus was found quite full of frozen urine, and it was thus fixed in its natural position. He figures it as being horizontal, and not vertical, in its position—the fundus pointing directly forwards, and the base directly backwards into the hollow of the rectum. The prostatic and membranous portions of the urethra are depicted as passing almost perpendicularly downwards from the neck of the bladder.

The succeeding fifteen plates are taken from transverse sections of the body at different levels, beginning above at the eyeballs and passing down to the level of the heads of the thigh-bones. In the first of these the optic nerves are exposed in the greater part of their extent, and the author points out that when the eyeball is at rest, these nerves are not straight but show an S-shaped curve. This curvilinear disposition of the nerves, he explains, is to prevent their undergoing tension during the movements of the globe.

Certain points of surgical interest are to be learned by a study of Plate V. Fig. 1, which represents the upper surface of a section through the head, at the level of the mouth. The saw having passed through the upper part of the tonsil, a good view is obtained of its position in relation to the internal carotid artery, and it will be observed, as Professor Braune remarks in the text, that Hyrtl's fears of wounding the artery in operations upon the gland are much exaggerated. Indeed, so long as the surgeon confines himself to a levelling of the tonsil, and not attempt its complete extirpation, there is no danger to be apprehended from the close proximity of the vessel. The surgical relations of the parotid gland are also very clearly delineated. The gland is seen to be enveloped by a strong fascial sheath, which not only serves as a lining for the niche in which it lies, but constitutes a demarcation between it and the internal jugular vein and other important structures upon which its deep surface rests. This fascia, the author states, is strongest where it covers the outer surface of the gland, and consequently inflammatory and other swellings of the parotid have a tendency to press inwards upon the nerves and vessels.

In Plate VI. the position of the common carotid artery in relation to Chassaignac's tubercle (anterior tubercle of the transverse process of the sixth cervical vertebra) is beautifully seen. It is depicted as lying immediately to the outside, and a little in front of the tip of this process, and Professor Braune in the text dis-

cusses the value of this relationship as a guide in tying the vessel. He considers that it is a landmark which cannot be trusted, seeing that the only cases in which it might prove useful are those where the operation is rendered difficult by swelling or the presence of a tumour, and in those cases it is very probable that the artery is pushed away from the tubercle. Indeed he quotes a case in which he made a section of the neck in a subject affected with goitre in which the artery was half an inch external to the tubercle. In ligaturing the carotid, therefore, at this point he concludes that it is better to trust to the muscles and fasciæ as guides, as these are unalterable in their relations to the vessel; and we are quite of the same opinion.

Nine plates representing longitudinal and transverse sections through the limbs also deserve special notice. In all, the relation of parts is very beautifully shown. In Fig. 1, Plate 19, a very good idea of the capacity of the knee-joint is given—the joint having been injected with water by means of a Pravaz's needle before the longitudinal section was made.

The value of the work is greatly increased by the introduction into the text of several woodcuts, which exhibit sections through bodies in which the relation of parts has been altered by disease. These are copied for the most part from Pirogoff's plates, and are scattered plentifully throughout the book.

Indeed, a more complete book upon Sectional Anatomy could hardly be published, and we are glad to hear that, in Edinburgh at least, it has already attained a wide circulation.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LVI.—MEETING VIII.

Wednesday, 2d May 1877.—Dr M. DUNCAN, *Vice-President, in the Chair.*

I. *Mr Chiene* showed the INNER TWO-THIRDS OF A CLAVICLE removed from a young man, aged 26. A tumour had existed in this part of the bone for about six months. From its consistency and limited character he had hoped it was cartilaginous, and therefore operated. He left the outer part of the clavicle untouched, so that the coraco-clavicular ligament was left intact. The operation was not a very difficult one, because the tumour was encapsuled, and he had the good assistance of friends. Catgut drains were

used and dropped off on the twelfth day, the patient returning home on the seventeenth. The tumour, of which he now showed them a microscopical section, was examined by Mr Watson Cheyne, and found to be sarcomatous in its nature.

II. *Dr James* then read a paper on HYDRONEPHROSIS, which will appear in a future number.

Dr Matthews Duncan said that the members had now heard *Dr James's* excellent paper, and he hoped some of them would favour the Society with remarks on the subject which had been so clearly brought forward.

Dr Wyllie had in common with the other members been greatly pleased with the views *Dr James* had treated in so suggestive and careful a manner. He was not, however, prepared to accede to all his conclusions. The theory given as to the low *specific gravity* of the urine was suggestive and correct, he believed; but the views on the pathogeny of hydronephrosis were doubtful. *Dr James* evidently thought that when the bladder expelled its contents, it remained contracted. It most probably, however, relaxed, and, therefore, opposed no obstruction to the inflow of urine. A more feasible explanation was that the obstruction was due to the thickened condition of the ureters and bladder from an inflammatory state of the mucous membrane. We know that in the gall-duets, catarrhal inflammation obstructs the flow of the bile; while after death it was possible to pass a probe up that duct, which was obstructed during life by this condition or by a plug of mucus. The lower extremity of the ureter was narrow and oblique, and therefore, when there was slight catarrhal inflammation the inflow of urine was obstructed. Cases of vesical calculus favoured this view. Contrary to what *Dr James* had said, the calculus probably caused no obstruction, but set up a cystitis, which passed up the ureter.

Dr James explained, that he held that a vesical calculus opposed the entrance of urine only indirectly; and *Dr Duncan* pointed out that *Dr James* had not in his paper said that the bladder remained contracted after micturition.

Mr Chiene thought that the misfortune of *Dr James's* paper was, that it was so full of suggestive ideas that they were hardly prepared to discuss it. He would not at present stay to consider *Dr Wyllie's* views, but pass on to a point alluded to by *Dr James*, which had for some time occupied his attention, viz., unrest of the bladder the great cause of the persistency of cystitis. The first case he would allude to was one of urinary fistula, where almost all the urine came the wrong way. The great difficulty in the treatment of such a case is that the edges of the fistula after being pared cannot be kept dry until union takes place. The treatment he adopted was to pare the edges of the fistula and keep a gum-elastic catheter constantly in the bladder. A piece of tubing passed from the proximal end of the catheter and dipped under carbolic-

lotion. Thus, by a syphon arrangement, the bladder was kept continually empty; no urine reached the fistula—the edges were always dry and union accelerated. The next point was as to the treatment of cystitis. The bladder was like the heart in having a systole and diastole, the former occurring normally, about four times in the twenty-four hours. In cystitis, however, this systole might occur one hundred times in the same period. Now, in such case, if they kept the bladder perfectly empty by constantly draining away its contents, they would, by thus giving the bladder complete rest, cure the cystitis, unless due to putrefaction. Personally, he thanked Dr James for his valuable paper.

Dr Matthews Duncan, with the members' permission, wished to make a few remarks on Dr James's paper, which he had highly appreciated. He would first point out that Dr Wyllie and Dr James were quite at one in giving the explanation of hydro-nephrosis as a mechanical disease. Any one who knew the history of medicine, even from the times of Harvey and Borelli, would see that the greatest progress had been made by applying the principles of physics to it. Simplicity, however, might be pushed too far; as in pathology, for instance, where hypertrophy of the heart or bladder was held to be due simply to the action of these organs. This was a thesis he denied, for in the uterus muscular hypertrophy did not express action alone. He only pointed out this fact as showing that there were other things besides mechanism to be considered in such questions. He thought that Dr James was not so confident as he might have been in his explanations. There was a deficiency in the theory of urination. He believed the ordinary theory to be quite erroneous. The bladder was quite as big when empty as when full. To diagnose disease of the bladder, they should measure it; and it was of little importance when this was done, whether before or after urination. He referred, of course, to measurement by passing a rod, and not to cubical capacity. Before Dr James's views were adopted, they required to know the amount of force necessary to stop the secretion and the flow of urine. The fact that a pressure of less than half-an-inch of mercury was sufficient to do the former was of incredible importance in physiology and pathology. They also needed to find out the force requisite to dilate the ureter and pelvis of the kidney. Any knowledge he had, confirmed the views of Dr Wyllie and Dr James, viz., that the pressure needed was incredibly small; and, as Dr Wyllie had suggested, a plug of mucus might do it. He had formerly experimented on the force necessary to distend the body of the uterus by a growing ovum. The amount was very small indeed, and was a little more for the internal os; which corresponded with the facts on this subject. He would only say, in conclusion, that they might congratulate themselves on having a new investigator in their Society who had taken the right road in his researches.

Dr James, in reply, expressed his gratification at the reception

given to his paper. In his cases he had been unable to find any inflammatory thickening sufficient to explain the hydronephrosis, as he was able to pass a fine probe up the ureter; and, in addition, in some cases there was no inflammation present at all.

III. A paper on THE SURGICAL FUNCTION OF THE OMENTUM was then read by Surgeon-Major Kenneth M'Leod, which appears at page 1 of this Journal.

Dr Matthews Duncan said the Society would now be glad to hear any observations on the elaborate and valuable practical paper which had just been read. There was great scope for remark.

Mr Chiene thought that it might appear invidious for him to speak on the paper they had just heard, as it had been communicated by him. From what Dr M'Leod had told him of his experience on this subject, he had advised him to bring it before the Society, and the result had been the valuable paper they had just listened to. He regretted that there was not a larger meeting. Their special thanks were due to Dr M'Leod, as the subject was one neglected in the standard works of this country.

OBSTETRICAL SOCIETY OF EDINBURGH.

SESSION XXXVI.—MEETING XII.

Wednesday, 9th May 1877.—Professor SIMPSON, *President, in the Chair.*

I. *Dr James Carmichael* exhibited a FŒTUS FROM A CASE OF MIS-CARRIAGE AT THE SIXTH MONTH. The ovum had been expelled, as would be seen, in its entirety. The placenta was much degenerated. The patient was about 30 years of age, and had contracted syphilis about ten weeks after impregnation. She was now suffering from secondary symptoms.

II. *Professor Simpson* showed a MUCOUS POLYPUS, which had caused a good deal of bleeding. He had removed it with the ecraseur. The patient had been under the care of Dr Watson of Mid-Calder.

III. *Dr Craig* exhibited the NAILS OF A NEWLY-BORN CHILD, which were of unusual length.

IV. *Dr Angus Macdonald* then concluded his paper ON THE BEARING OF CHRONIC DISEASE OF THE HEART ON PREGNANCY AND PARTURITION, part of which had been read to the Society at the last two meetings.

Dr Matthews Duncan thought that no paper of greater importance and interest had ever been read in the Society. It was, strictly speaking, a pathological one. Yet many points brought forward bore upon and explained some of the physiological pro-

cesses connected with pregnancy. He considered the paper would remain as a landmark on the subject.

Dr Underhill thought that, in face of a paper with so much matter, it was hardly possible to discuss it in the usual manner. To him many points were quite new, more especially that of the danger of a contracted mitral valve to pregnant women. He warmly commended the paper.

Professor Simpson considered the paper one of great interest and value.

SESSION XXXVI.—MEETING XIII.

Wednesday, 23d May 1877.—*Dr JAMES YOUNG, Vice-President, in the Chair.*

I. *Dr James Young* read the following NOTE OF A CASE OF PARTIAL PLACENTA PRÆVIA:—My only reason for troubling the Society with a brief note of this case, is the peculiar interest attached to all cases of hæmorrhage, as well as the comparative rarity of instances where the placenta forms the presentation (1 in 500).

In dealing with such cases, we must recollect (although a disputed question) that the hæmorrhage must be, to some extent, unavoidable, owing to the progressive dilatation of the os uteri—widely differing from the hæmorrhage in accidental separation of the placenta, which may be induced by a false step or other accident—while, in placental presentations, the rupture of the utero-placental vessels is due to labour pains, and therefore unavoidable.

The grand consideration in all such cases is the treatment which will result in the speedy delivery of the woman, which is essential for her life, as well as that of the child.

Some obstetricians maintain that the causation of bleeding in placenta prævia is the same as in cases of accidental hæmorrhage. Rupture of utero-placental vessels doubtless takes place in both forms of hæmorrhage; but, in the latter, care and prudence might prevent what in the former would result independently.

Having been requested to attend C. R. in her confinement, I was hastily summoned at 3 o'clock P.M., on 16th April. I found several marked symptoms of placenta prævia. The patient informed me that, at 12 P.M., she had awakened because of an excessive discharge of blood. Having obtained some assistance, she rose and sat on the bedroom utensil, which was almost immediately filled three-fourths with pure blood. She had had very little pain; but, having swallowed some laudanum, she got back to bed, and sought no further help till the hour above stated. The hæmorrhage had continued during the morning, and throughout the day, in small quantities. On examination, I found a considerable portion of the placenta lying over the left margin of the internal os uteri.

The pains were very slight; but, nevertheless, the bleeding continued, although not immoderate. I resolved, as the patient was fully $8\frac{1}{2}$ months pregnant, and the bleeding had been excessive and was continuous, to encourage the labour. The os uteri, which was about the size of a shilling, was slightly dilated with the finger, and a portion of the placenta was partially separated. The membranes were easily ruptured by the careful introduction of a pointed pencil. I now left for two or three hours. At 8 o'clock, the os was still only slightly dilated, and the bleeding continued. I carefully inserted a gum-elastic male catheter into the uterus on the right side, and left it, having somewhat carefully adjusted it with tapes. Pains speedily supervened, and labour went on slowly till 2 A.M. (17th April), when the os was fully the size of half-a-crown. The hæmorrhage was checked by the descent of the foetal head (the presentation being natural) against the lower portion of the placenta. At 8 A.M., the patient was delivered of a healthy girl.

Considerable hæmorrhage followed; but the placenta was speedily and easily extracted. She made a good recovery. On examination of the placenta, immediately after its expulsion, it was found that a fifth part was quite cold, but perfectly healthy in texture.

Dr Burn, in similar cases, had used the vaginal plug to stop bleeding when the membranes were unruptured, and found the plan invariably successful. He thought it hazardous in first cases even to rupture the membranes so soon as *Dr Young* had done. In many cases he found the use of a sponge-tent advantageous.

Dr Matthews Duncan thought the introduction of a Barnes's bag or sponge-tent would have been good practice.

Dr Ogilvie Will had lately attended a patient with placenta prævia in a case of twins. He had ruptured the membranes and turned with success.

II. *Dr Matthews Duncan* read a paper on a CASE OF PROCIDENTIA UTERI, which appears at p. 25 of this Journal.

Dr Young thought the subject interesting, and the paper a practical one. He had lately seen a case from the country in which the procidentia was extreme, the uterus was enlarged, and the patient complained of an irritating discharge from the womb. He thought it would be interesting to know in *Dr Duncan's* case, what had been the cause of the alteration in size of the uterus.

Dr Underhill drew attention to the fact which *Dr Duncan* sought to establish, that in these cases the whole of the abdominal organs were drawn down. This, although noted by some of the older authors, was lost sight of in many of the text-books of the present day. He had met with a case of procidentia in pregnancy, patient miscarried at the third month; the cervix was fully four inches in length. *Dr Duncan's* case was peculiar, from the atrophy

which occurred when hypertrophy would more naturally have been expected.

Dr Gordon had frequently met with cases of procidentia. In many the patients had used ring gutta-percha pessaries with singular advantage.

Dr Dickson stated a case in which during the time a patient was wearing a ring pessary, a post-rectal abscess occurred.

III. *Dr Engelmann*, of Kreuznach, communicated through *Dr Matthews Duncan* a paper, entitled, SOME REMARKS ON FIBROUS TUMOURS OF THE UTERUS, which will appear in a future number of this Journal.

Dr Young thought the treatment of fibrous tumours one of great interest. As the treatment, other than hydropathic, had lately occupied the attention of the Society, he considered it hardly necessary to revert to it on the present occasion. He might mention, however, that he did not consider ergot of much use in these cases, although, in some instances, it was considered beneficial, and he had used it very frequently in cases of fibrous tumour. He had met with a case in which there existed a fibrous tumour in the anterior uterine wall; the patient married, became pregnant, and was safely delivered.

Dr Croom thought ergotin of great service, and regretted that the experience of some of the Fellows should be to the contrary. He had met with a case some time ago of miscarriage, in which he afterwards discovered a fibrous tumour. In this case ergotin was injected twice a week for three years. The patient became again pregnant and miscarried, and he then found the tumour much smaller, and could not doubt but that the ergot had materially lessened the size of the tumour, and diminished the risk of bleeding.

Dr Macdonald, not having been present at the previous discussion of this subject, desired to make a few remarks. In his experience married women with fibrous tumours were oftener sterile than fertile. As regards the treatment by ergotin, he must enter his caveat against the opinion expressed from the Chair that this drug was of no use, for in many cases in his practice it had been of service. Lately in the case of a patient from England, bleeding of many years' standing in a fibroid uterus had been entirely stopped by the use of ergotin. The cases, however, must be carefully selected, and those that were most favourable were such as presented general enlargement and were of a rather loose texture. He had frequently seen painful nodules arise at the part where the ergotin was injected; and on one occasion had met with a stinking abscess. But in that case he believed the ergotin was not in good condition. It ought always to be freshly prepared. As to the hydropathic treatment of such cases, he had to confess that he had failed to grasp the theory of the treatment as advanced

by Dr Engelmann. In regard to the evil effects of ergotin, there was a certain class of cases in which it could not be borne on account of pain, sickness, and prostration.

Dr James Curmichael alluded to the fact of abscesses forming in some cases at the site of injection of ergotin. He had heard of a case in which pyæmia had been induced in this manner after delivery.

Dr Matthews Duncan had used ergotin extensively in treating fibrous tumours, and although he could not speak definitively on the subject, he thought it of value in proper cases. With reference to the remarks upon the injurious local effects of ergotin injection, he attributed these to the abundance of bacteria, which were readily formed in such solutions. They could be effectually destroyed by boiling the solution. The value of this paper, in his opinion, lay in the views expressed by such an able and unprejudiced observer as the author, on the use of Kreuznach water in these cases. He was in the habit of regularly sending patients to Kreuznach, and he believed the beneficial results of treatment had not been exaggerated by Dr Engelmann.

Dr Gordon thought it wonderful what nature could effect in these cases in the way of cure. He knew of many cases of spontaneous cure, which in his opinion rendered the results of other treatment doubtful.

Part Fourth.

PERISCOPE.

(Concluded from page 1039, vol. xxii.)

GANGRENOUS TUBERCULO-ULCERATING SYPHILID.—Such is the name of this affection, which, along with M. Bazin, we consider as a complication and not as a special variety of syphilis. This form is excessively rare. In the lectures delivered by M. Bazin in 1863, he states that he had observed only four cases. M. Dubusq, in his treatise on precocious malignant syphilis, cites but two examples, while this is the fourth case I myself have seen.

In the observation of this case we must notice as a special feature the occurrence of a syphilid of the skin so short a time after the inoculation of the syphilitic virus. Scarcely four months since the commencement of the disease, and she already suffers from extremely grave lesions, characterised by the deep and extensive ulcerations which are rarely observed except after a greater or less lapse of years. Lastly, a fact not less interesting is to see by the side of superficial manifestations belonging to the second period, excessively deep lesions, such as are usually observed in the third stage.

It is necessary to know that in certain patients you will meet with deep ulcerations, and at the same time a papular syphilid of the second stage; although these lesions are usually only seen five, ten, twenty, or sometimes even thirty years after the evolution of the primary symptoms. There is in this particular course of syphilis, in this association of symptoms belonging to different stages of the disease, a special form which has been noticed by MM. Bazin, Fournier, myself, and most authors, and which has been named malignant syphilis. You should understand well what is meant by this term, malignant syphilis. Do not suppose that it is intended to refer to the activity of the syphilitic poison. When syphilis attacks the whole economy it brings on what is called syphilitic cachexia; and the name malignant syphilis is reserved to designate this special condition, in which deep and severe lesions, ordinarily belonging to the third stage, come on prematurely.

This form is not so rare as one might think, and you will certainly meet with it pretty often. Formerly, when M. Ricord began to divide syphilis into three sharply-defined periods, the attention of physicians had not been awakened by the facts which I set before you. Experience afterwards showed that if this separation of the disease into three periods was true in general, it was not absolutely so. It has been sought to explain the cause of malignant syphilis, and several hypotheses have been advanced. It was first maintained that it partook of the nature of a virus having special properties, which, once established in the organism, produced very grave symptoms by reason of its malignity. Observation has shown that this was not the case, for in individuals infected by the same virus, some had syphilis in a benignant, others in a malignant form. Still another theory, sufficiently peculiar, has been advanced. Comparing this malignant syphilis with the epidemic which raged towards the end of the fifteenth century, in which the lesions were so severe and various as to cover in a short time the bodies of the patients, and struck by the apparent benignity of actual syphilis, Auzias-Turenne declared that the mildness of the disease in the majority of the patients was due to the fact that their ancestors had been syphilitic, and that the virus had been thus weakened in its transmission from generation to generation. Malignant syphilis, on the contrary, declared itself in individuals whose ancestors had been preserved from infection. This is an explanation quite hypothetical, and which it is impossible to verify.

But this is certain—namely, that when we see malignant syphilis manifest itself in certain individuals, the gravity of the symptoms rests on something inherent in the patients themselves. In fact, syphilis with these characteristics almost invariably attacks people who are weak and debilitated, either from bad habits of living, or from disease. Thus it is more especially met with in drunkards.

At the hospital of St Louis, out of seventy-two beds, I had constantly about ten cases of malignant syphilis under treatment, half of those attacked being addicted to the excessive use of alcohol. It often, too, occurs among the scrofulous. Scrofula is a most debilitating disease, and it is easy to understand how those affected by it should offer a favourable soil for deep-seated manifestations. In this woman we find evident traces of the scrofulous diathesis; and were I to seek for an explanation of the gravity of the disease in her, I should certainly blame the existence of scrofula.

The prognosis in this woman's case is grave: first on account of the malignant type of the syphilis, and then on account of the gangrene with which it is complicated. Nevertheless, it is probable that she will be cured. Under the influence of treatment we shall see the disease improve, even go the length of disappearing, only, however, to reappear two or three months later. It will only be after several successive attacks, which will manifest themselves in spite of all treatment, that the cure can be regarded as complete.

The treatment to which we shall here have recourse will be at once general and local, and having to combat two varieties of symptoms belonging to different stages of syphilis, we must administer two medicines, useful above all, in similar cases, mercury and iodide of potassium, but giving a marked preference to the latter. It is not uncommon with these persons to find symptoms occurring either in the stomach or bowels which indicate that the mercury is badly borne; and it is necessary in that case to push the iodide of potassium, giving it in doses of three, four, and five grammes daily. Such is the specific treatment; give mercury in small, and the iodide of potassium in large doses.

As this malignant form of syphilis depends on a general condition, care should be taken to keep up the strength of the patients by tonics and appropriate hygiene. Also that the patients should have good nourishment, composed of roast-meat, wine, and coffee, and that no form of fatigue is allowed to interfere with the treatment. Only by these means can one hope to obtain a cure. When the patients have not taken too much mercury, the use of sulphur waters, especially those of Baréges, Dax, Suchon, Aix-en-Savoie, etc., taken either as drinks, douches, or baths, will aid by their wise administration the success of the specific treatment.

Local as well as general treatment is necessary. Not as regards the tubercles and squames, but it is useful where ulcerations exist, which are often accompanied by severe pain. It is beneficial, then, to excite the sores morning and night with quinine lotion, aromatic wine, or a solution of chloral. Iodoform powder will be found useful in fungoid, grayish ulcers.

But in cases similar to this one, the best mode of treatment is the application to the ulcers of the plaster *de Vigo*. It is what we shall do with this woman. Twice daily the sores will be washed with a decoction of aromatic wine, and covered with the plaster, which

shall be renewed every day. To this will be added the mixed treatment; we shall give this patient first two, then three and four grammes daily of iodide of potassium, at the same time one of Sédillot's pills, put her on a good diet, and I hope by these means soon to see an improvement.—*Gazette des Hôpitaux*, 19th Oct., 1876.

OPHTHALMOLOGY IN ITS RELATION TO GENERAL MEDICINE.—
“There is one other direction of inquiry. In the case of hearing, there is evidently an accommodative apparatus analogous to that in the eyes. Omitting the muscles of the pinna, which in man are rudimentary, there are inside the tympanum the tensor tympani and stapedius muscles; we have to take into account also the tensor palati, because it has to do, if not with what I call the accommodation of the ear, at any rate with the functions of hearing. The otic ganglion, Trœltzsch says, is of the same importance to the ear as the lenticular ganglion is to the eye. It is then, I think, legitimate to inquire if we do not find in diphtherial palsy occasionally affection of hearing analogous to the defect of sight. Besides, if the hypothesis be correct, that the otic ganglion in such a case is affected, there would be no palsy of the stapedius muscle; and, more than all, the tensor tympani and the tensor palati would not be entirely paralyzed, as they receive a supply directly from the internal pterygoid branch of the fifth nerve, as well as from the otic ganglion. Moreover, the tensor tympani is the accommodator for high sounds; and thus, on the hypothesis, we should only expect loss of power to recognise high sounds. So far, then, from expecting to find deafness in diphtherial paralysis, I should expect only slight interference with the power of appreciating high-pitched sounds. I have met with but one case of slight affection of hearing in diphtherial paralysis. A medical man said it was not enough to impair his hearing for ordinary purposes, but, to use his expression, ‘enough to render music unintelligible.’ It was just the kind and degree of effect one would expect to find. Slight defects of hearing are not likely to be noted by unskilled persons. It is a remarkable fact that double hearing has never been noted except in musicians (Roosa), although, of course, it may occur in anybody. It would seem to me that the investigation of the states of hearing in diphtherial paralysis could only be possible in an intelligent and also educated patient, and when the investigator is an aural surgeon. For there is the obvious difficulty, as Greenhow insists, that, if there be deafness, it may be owing to some affection of the Eustachian tube,—a relic of the active diphtheritic process. In cases of Menière's disease, and in other ear affections, the aural surgeon notes the patient's power of perceiving particular notes; and I see no reason why the state of hearing in cases of diphtherial paralysis should not be equally carefully noted.

Before leaving this subject, I would mention that the clearest account of the peculiar difficulty of articulation which occurs in

paralysis of the palate, is given by Donders in an appendix to his exposition of diphtheritic paralysis of the ciliary muscles; it is not an uncommon thing for paresis of the lips to be suspected when the palate is solely affected."—J. Hughlings Jackson in *Brit. Med. Jour.*, 12th May 1877.

DISEASE FROM WORRY AND MENTAL STRAIN—PHENOMENA OF REDUCED VASCULAR TENSION.—"Under varying tension of the vessels there are flushes, chills, coldness of the extremities, perspirations, irregular actions of the bowels, deficient tone in the stomach and intestines, with flatulency as a constant and oppressive symptom, and often a copious diuresis of a perfectly colourless secretion. In addition to these symptoms there are at times distressing and even painful sensations of ringing sounds in the head. These sounds are arterial murmurs; they are caused by the effect of pressure upon the relaxed arteries. In any point of the arterial tract where an artery runs through a rigid canal, as through the carotid canal in the base of the skull, the artery, when its walls are deficient in tension and relaxed, presses with each impulse of the heart on the resisting surrounding wall. Thereupon is vibration and murmur, which to the physician may be detectable by auscultation in some parts of the body, and which are audible to the patient himself in the case of vibration in the carotid bony canal, is compared by him to the sound of a rush of fluid in quick pulsation, or to a booming noise, a hissing or whistling note, or a tinkle like that of a bell. For the canal, from the sides of which the vibration proceeds, being in close proximity, indeed in direct connexion by solid conducting substance with the organ of hearing, the faintest vibration is detected. The sound produced, when it is sudden and unexpected, as in moments of extreme fear, is occasionally mistaken as a sound proceeding from without, with no obvious cause. I have known several instances, one notably in a member of my own profession, in which the audible vibration from arterial relaxation has been present at intervals on occasions of nervous exhaustion for many years. I have known such vibration mistaken for aneurism. I have known it to be developed instantaneously, and to subside with equal rapidity after a long continuance."—*Hysteria from Mental Strain—Phenomena of Reduced Vascular Tension, from Diseases of Modern Life*, by Dr Richardson, F.R.S.E.

URETHRAL POLYPUS.—At a late meeting of the Medical Society of Vienna, Dr Gruenfeld showed a polypus, twenty-five millimetres long and twelve millimetres in thickness, which he had removed from the urethra. The polypus was situated twelve centimetres from the external orifice, and the diagnosis and removal would not have been possible without the endoscope. This is the first case in which a tumour of this size and depth has been diagnosed.

MM. VINCENT AND GUIGNARD ON DISEASE AND EXCISION OF THE CALCANEUM.—This valuable conservative operation is quite familiar to us now.

M. Vincent considers this operation most appropriate in the young. He considers that the danger augments with the age of the patient.

M. Guignard considers disease of the calcaneum difficult to diagnose in its early stages. He recommends gouging out the disease as preferable to excision when it can be adopted. He considers that the latter operation should be reserved for those cases in which the whole bone is diseased. Both surgeons practise the subperiosteal operation for resection.—*Le Progrès Médical*.

DISLOCATION OF THE THUMB BACKWARDS. BY DR L. H. FARABEUF.—Dr Farabeuf has carefully examined cases of dislocation of the thumb, he has dissected dislocations produced by himself on the dead body, and he has made a hundred experiments on different ways of producing the dislocation. As the result of these observations, he has come to the following conclusions—that the injury produced is always dislocation of the phalanx backwards on to the dorsum of the metacarpal bone, and that there are three varieties of this dislocation.

1. *Simple-Incomplete*.—The articular surface of the phalanx resting on the top of the articular surface of the metacarpal bone, the sesamoid bones on the face of the latter.

2. *Simple-Complete*.—The articular surface of the phalanx on the dorsum of the metacarpal bone, carrying the sesamoid bones with it, the phalanx and metacarpal being at right angles.

3. *Complex*.—The same as No. 2, with the axes of the bones in the same plane, and the sesamoid bones interposed between the ends of the phalanx and metacarpal.

Dr Farabeuf takes the position of the sesamoid bones as the chief basis of his classification and treatment. Attempts at reduction by extension and flexion of the phalanx fail, he says, through the action of the lateral ligaments. Hence the importance of the position of these sesamoid bones.

For reduction of the dislocation, he recommends that the phalanx should be pressed down on the metacarpal bone (at right angles to it) and made to glide in a semicircle over the articular surface of the latter, pushing the sesamoid bones before it. In the third variety the phalanx must first be placed in the position of No. 2, namely, at right angles to the metacarpal bone. Without this manœuvre, the sesamoid bones being between the phalanx and metacarpal would prevent reduction unless the ligaments were torn through.

Dr Farabeuf's paper is illustrated with upwards of 20 plates, which are well executed, and help materially to elucidate the text, and make it attractive.—*Archives Générales de Médecine*.

THE EFFECT OF INAUDIBLE VIBRATIONS UPON SENSITIVE FLAMES.
—During a recent visit to Birmingham, my friend and host, Mr Lawson Tait, showed me some interesting experiments with one of Mr Galton's whistles, capable of yielding vibrations beyond the limit of hearing. This led to the suggestion of trying a sensitive flame with these whistles, and in fulfilment of my promise to select and send to Mr Tait a burner sensitive to very high notes, I was yesterday led to make the following experiment, the result of which is I believe new, and I think sufficiently interesting to put on record. A sensitive flame was obtained just two feet high when undisturbed, but sinking down to seven inches under the influence of the feeblest hiss, or the clink of two coins. Adjusting the Galton whistle, which Mr Tait lent me, so as to yield its lowest note, little effect was produced on the flame; a shrill dog-whistle produced a slight forking of the flame, but that was all. Raising the pitch of the Galton whistle, the flame became more and more agitated, until, when I had nearly reached the upper limit of audibility of my left ear, and had gone quite beyond the limit of my right ear, the flame was still more violently affected. Raising the pitch still higher, until I quite ceased to hear any sound, and until several friends likewise could detect no sound, even when close to the whistle, I was astonished to observe the profound effect produced upon the flame. At every inaudible puff of the whistle the flame fell fully sixteen inches, and burst forth into its characteristic roar, at the same time losing its luminosity, and when viewed in a moving mirror, presenting a multitude of ragged images, with torn sides and flickering tongues—indicating a state of rapid, complex, and vigorous vibration.

Nor was this effect sensibly diminished by a distance of some twenty feet from the flame. Placing the flame at one end of the large lecture theatre of this college, and blowing the whistle at the farthest point away, a distance at least of fifty feet and more than thirty feet above the flame, still the effect produced was very pronounced. There can hardly be a more striking experiment. A single silent and gentle puff of air sent from the lips through the whistle, nothing whatever to be heard, and yet fifty feet away an effect produced that might readily be seen by thousands of people.

The extreme smallness of the amount of motion actually concerned in producing this great change in the aspect of the flame is evident. For the inaudible vibrations, having at their origin but a small amplitude, gave rise to a spherical air-wave, which at a radius of fifty feet—and with the vast enfeeblement due to this distance—knocked down a two-foot flame, though the surface acted upon had an area of less than a square inch—for it is only the root of the flame that picks up the wave motion. Of course everything depends upon the delicately-poised state into which the flame has previously to be brought. It then, like a resonant jar, enters into a state of vibration which appears to be synchronous with the note producing the effect. By this means it may be possible, with the

aid of a mirror moving at a known speed, to determine the vibration number of these high notes, and thus with greater exactitude fix the upper limit of hearing.

The flame giving the effect here described was produced by coal-gas contained in a holder under a pressure of ten inches of water, and issuing from a steatite jet having a circular orifice 0·04 inch in diameter.—W. F. Barrett in *Nature*, 3d May 1877.

SOUND VIBRATIONS OF SOAP-FILM MEMBRANES.—The vibration-forms of membranes agitated by their fundamental and upper tones, have usually been studied by means of thin bladder or india-rubber stretched on a ring or frame (see Helmholtz, *Sensations of Tone*, chaps. iii. and v.; Pisko, *Die Neueren Apparate der Akustik*, p. 75). While I was lately trying with Mr R. Knight the capabilities of various membranes of taking impressions from vocal sounds for phonautographic purposes, the idea occurred of using soap-film. This was at once carried into effect by dipping the end of a lamp-chimney into some soap solution, strengthened in the usual way with glycerine and a little gelatine. On singing near the open end of the chimney the series of forms belonging to the various notes became plainly visible, those produced by the upper tones being as it were engine-turned in their complex symmetry, in a way to which the sand lines on so coarse a material as caoutchouc can bear no comparison. To exhibit these forms at a popular lecture here last night, the light of an oxyhydrogen magic lantern was simply reflected off the vibrating film upon the screen in a disk of some three feet in diameter, so as to show its patterns on a large scale, when set in movement by talking, singing, and playing a cornet in its neighbourhood. The effects were of singular clearness and beauty. To lecturers who may use this new and easy means of making the more complex sound-vibrations appreciable by the eye, I would mention that by slightly thinning the soap solution, and adding a few drops of ammonia, they may obtain a film, more free from interference colours, so as to display the vibration-figures on an almost clear ground. But if this is done, the thicker mixture should be used afterwards, for the gorgeous scenic effect of the masses of prismatic colour whirled hither and thither by the musical vibrations.—Edward B. Taylor in *Nature*, 3d May 1877.

SUBSCAPULAR FRICTION. (*Centrallb. f. Chir.* No. 5, 1877).—Terrillon adds three new cases to the nine observations which formed the basis of his work on Subscapular Friction, and the formation of an adventitious bursa beneath the scapula; so that with those of Gaujot, Boinet, Demarquay, and Galvagni, eighteen cases of this peculiar affection have already been described. The three patients, of whom one was a pastry-cook, and two Parisian physicians, exhibited the following symptoms in common:—Rough (*harle*) crepitation under the scapula, which occurred when the parts were moved, after the scapula had been drawn towards the middle line by muscular action, and pressed against the thorax;

depression of the shoulders when at rest; prominence of the median border of the scapula, and a certain weakness in raising the arm. The usual seat of crepitation is in the neighbourhood of the lower angle of the scapula; but it has likewise been observed higher up near the spine of the scapula, and below its upper angle (Gaujot). Terrillon supposes that the following causes may produce the crepitation:—(1) Abnormal curvature of, or processes from the ribs and scapula, by a sort of wear-and-tear (*usur*). This may induce perforation of the subscapularis and serratus magnus, and thereby bring bones into actual contact. (2) Primary atrophy of the subscapular muscles, *e.g.*, in phthisis. (3) Complete or incomplete ankylosis of the shoulder-joint, which causes an increase of scapular movement, and more or less pronounced muscular atrophy. This he considers the most frequent cause of the phenomenon. Granting, however, the correctness of Terrillon's hypotheses, there remain a number of cases which cannot be classed under these three heads. Other explanations must therefore be sought for. Ledentu points out that, according to Cruveilhier, the uppermost segment of the serratus magnus, which is inserted into the anterior surface of the upper angle of the scapula, is distinctly separated from the three following slips by a layer of cellular tissue, as also is the fourth digitation from the rest of the muscle. Now, both these gaps exist precisely where, as a rule, crepitation is most evident. A congenitally abnormal breadth of these, or even an unusual thinness of the central portion of the muscle, without true atrophy, may explain how, without a specially demonstrable cause, the bones may rub upon one another; how this friction may produce a circumscribed muscular atrophy, not to be detected by the electric current, and how certain movements which favour friction may very easily cause pain and weakness of the upper extremity; likewise, why an orthopædic apparatus which draws the scapula away from the thorax, removes all these troublesome symptoms, and finally, why Faradization in such cases fails completely to alleviate.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

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[The author of these Reports will be glad to receive any books, pamphlets, or papers relating to *Materia Medica* or Therapeutics. They may be forwarded through the agencies of the *Edinburgh Medical Journal*.]

ACTION OF THE SALTS OF BERYLLIUM, ALUMINIUM, YTHIUM, AND CERIUM.—In a brief paper in the *Journal of Anatomy and Physiology* for April 1876, Dr James Blake records the result of

his experiments relative to the physiological action of the salts of beryllium, aluminium, ytthium, and cerium. The substances used in these experiments all agree in the more marked physiological phenomena they give rise to when introduced directly into the blood. Their most striking action is on the systemic and pulmonary capillaries. This is shown as regards the pulmonary capillaries by the sudden fall of the pressure in the arteries that immediately follows their injection into the jugular. When this gives way, and the substance passes on into the left side of the heart and through the arteries to the systemic capillaries, these become contracted, so that, the blood not escaping from the arteries, the pressure rises rapidly, and in a few seconds is increased far above the normal amount. These substances also exert an action on the nervous system, as is shown by the arrest of respiration, and its renewal sometimes after an interval of two and a half minutes. The action on the nervous system is more marked with the salts of cerium and ytthium, more particularly in changes in the rhythm of the heart's action. This effect on the heart, Dr Blake believes, can be carried so far as to arrest its pulsations even before the substances are applied to its parietes; at least, he has seen the action of the heart arrested within two or three seconds when rather large doses of cerium and ytthium salts had been injected into the arteries. He thinks the muscular movements that continue so long after death are connected with their action on nerve-tissue. These substances are evidently not heart-poisons, as they are stated to be by Rabuteau, otherwise the heart would not go on contracting under a pressure of 150 cm. to 200 cm., and continue beating long after the respiration is arrested. If they exert any influence on the irritability of the heart, it is to increase it particularly in the muscular fibres of the left auricle, which has been frequently found contracting when every other part of the organ was still. As regards the connexion between the atomic weights of the substances and the intensity of their physiological action, a series of experiments with the salts of beryllium and aluminium, conducted expressly to determine this point, shows that, at least as regards these substances, the connexion is closer than Dr Blake had supposed.

NITRATE OF ALUMINA IN THE TREATMENT OF PRURITUS VULVÆ.
—Dr H. T. Gill obtains more favourable results in the treatment of pruritus vulvæ with nitrate of alumina than with any other remedy. He uses as a vaginal injection or external wash a solution of from four to six grains of the salt in an ounce of soft water. It may be used once, or, if necessary, twice daily.—*St Louis Med. and Surg. Journal*, quoted in *Lond. Med. Record*, 15th Feb. 1876.

ACTION OF THE SILVER SALTS ON THE MUSCULAR AND NERVOUS SYSTEMS.—In a series of experiments on the action of silver on the muscular and nervous systems, Curci used a combination of one part of chloride of silver, three of hyposulphite of soda, and thirty of dis-

tilled water. Administered thus, silver does not irritate the skin or mucous membranes. Injected subcutaneously, it produces slight inflammation and oedematous swelling, but is easily absorbed, and does not coagulate the blood. M. Curci concludes, from his experiments, that silver acts on the sensory nerves, and through them on the posterior columns of the cord. It first stimulates them and increases sensibility to pain, raises reflex excitability, and extends its action to the motor portion of the cord, producing tetanus and increased muscular tonus. It increases muscular irritability, and paralyzes secondarily the sensory nerve-centres, especially the respiratory centre. At length it annihilates reflex excitability, respiration and circulation cease, and the heart remains in a state of diastole. M. Curci thinks that these results show the inefficacy of silver in the diseases for which it has been hitherto in repute—myelitis, paralysis agitans, and locomotor ataxy. Where there are softening or induration, proliferation of connective tissue, and destruction of nerve-elements, and where the muscular tonus is weakened, no good action can be expected from a medicine which itself produces these conditions. Silver may be used beneficially in cases of epilepsy which depend on excessive irritation of the spinal cord, but it exerts no effect in those due to anatomical lesions. In hysteria it is useless, but is beneficial in chorea. Its administration in nervous asthma may be attended with excellent results; and as it reduces the irritability of the respiratory centre, it would most probably be especially useful in cases attended with spasm of the inspiratory and bronchial muscles.—*Giornal Veneto di Scienze Mediche*, 1876.

ON THE MEDICINAL ADMINISTRATION OF ARSENIC.—The following are the principles laid down by Dr Duncan Bulkley as regards the therapeutic use of arsenic:—

1. Arsenic, when administered in medicinal doses, has quite another action from that manifested by poisonous doses; the average dose of the former is 1-24th of a grain, while the smallest toxic dose is stated at two grains.

2. Arsenic in medicinal doses does not produce any slow poisoning, but has been administered for months or years in quantities, a small portion of whose aggregate amount would destroy life at once. Hebra has administered a total of more than half-an-ounce to a single patient. The accounts of the toxiphagi of Styria are true, and arsenic is eaten by some for many years without apparent ill effect.

3. Arsenic given by a careful practitioner in doses to be effective, need never produce any symptoms which should cause regret.

4. Arsenic is eliminated very rapidly, chiefly by the bowels and kidneys, so that the urine shows evidences of it in a few hours; no trace of it can be found on careful analysis of the body after death two weeks after the last dose of arsenic.

5. Arsenic, therefore, does not accumulate in the system, and no fear of this need be entertained; but when it is administered in increasing doses, absorption may be hindered, and when the doses become very large, active absorption of the large dose may give rise to a suspicion of cumulative action.

6. The first symptom of a full dose of arsenic in a very large share of cases is a fulness about the face and eyes, and conjunctival irritation and tenderness. This need not be exceeded, but may often be kept up with advantage to a slight degree, till the disease yields. Before any harm is done by the arsenic, either this or a slight nausea or diarrhœa manifests itself.

7. Arsenic should always be given with, or just after, meals; it is often best to give it alone, or with a small amount of bitter infusion.

8. The bowels should first be well purged, and an occasional laxative will both assist the action of the drug, and prevent or modify some of its unpleasant effects.

9. If the urine becomes loaded, and the tongue coated, it is best to stay the medicine for a short time, and give diuretics; some of these disturbances can be prevented by combining an alkali, as acetate of potash, carbonate of soda, or aromatic spirits of ammonia, with the arsenic.

10. The most serviceable forms in which to use arsenic named in the order of their value are—solution of the chloride of arsenic, solution of the arseniate of potash, that of the arseniate of soda, and the arseniate of ammonia, arsenious acid, iodide of arsenic, and the arseniates of iron and quinine; and, of as yet untried efficacy, solution of the chloro-phosphide of arsenic, and arseniate of antimony.

11. The dose of arsenic, small at first, is to be increased slowly until some of its physiological effects are manifested, or the disease yields; it may be then somewhat diminished.

12. It is very important that arsenic be taken very regularly and persistently, and always under the supervision and inspection of the physician.

13. Arsenic is valuable in chronic rheumatism, hence is useful in arthritic eruptions; it is serviceable in certain neuroses, as chorea and neuralgia, therefore in skin diseases, with neurotic elements; and it possesses anti-malarial properties, and is consequently serviceable in diseases of the skin showing periodic symptoms, as intermittent urticaria, etc.; likewise in patients with other skin diseases who have been exposed to miasmatic influences.

14. Arsenic is certainly valuable in psoriasis, eczema, pemphigus, acne, and lichen, in proper cases, and when due regard is paid to the secretory organs and to diet and other elements of general health; of less certain value in lupus, ichthyosis, sycosis, verruca, and epitheliomatous and cancerous diseases; it is absolutely useless or harmful in syphilodermata, the animal and vegetable parasitic

diseases (except in rare cases), in elephantiasis Græcorum and Arabum, in purpura, prurigo, herpes zoster, scleroderma, molluscum, contagiosum, and fibrosum, cheloid, vitiligo, nævus, etc.

15. The only local application of arsenic which is justifiable, is either one where the strength is so weak, and the extent of its use so small, that there is no danger from absorption, which may occur when not expected, or one of such a strength as to kill the adjoining tissue at once, and so prevent absorption, as is the case with Marsden's mucilage.—*New York Med. Journal*, August 1876.

BROMIDE OF ARSENIC IN THE TREATMENT OF DISEASES OF THE NERVOUS SYSTEM.—Dr Th. Clemens states that he has obtained astonishing results with bromide of arsenic in the treatment of diseases of the nervous system, and especially of epilepsy. The following is the formula which he recommends, and which he thinks should replace Fowler's solution:—R. Pulv. arsenic, alb., potass. carb. e. tartar., āā ʒi.; coque cum aquâ destil. lb. ss. ad solut. perfect.; adde aq. evaporat. restitutâ, aquæ destil. ʒxij., dein adde brom. pur. ʒij., refrigerat. stet per sufficient. temp. ad decol., s. liq., arsenic bromat. Of this he gives one or two drops in a glass of water once, or, if necessary, twice daily. This dosage may be continued for months or even years, without producing any unpleasant effects. In only two cases of epilepsy did he effect a complete cure, but in all the cases marked relief was obtained. In connexion with the bromide of arsenic an almost exclusively meat diet is advised. The patients should be as much as possible in the open air. Unlike the bromide of potassium, the arsenical salt does not require to be given in increasing doses, and, instead of interfering with digestion, improves the nutrition and strength.—*Allg. Med. Central-Zeitung*.

EFFECTS OF SULPHATE OF ATROPIA ON THE NERVOUS SYSTEM.—In the *Journal of Anatomy and Physiology* for January 1877, is a paper by Professor Sydney Ringer and Mr William Murrell, detailing the results of their experiments relative to the effects of sulphate of atropia on the nervous system. They conclude that the late occurrence of tetanus in atropia poisoning is not due to paralysis of the motor nerves, but that it is owing to the cord being slowly affected. It appears that whilst the poison very quickly paralyzes, it takes many hours, or even days, before it tetanizes. They also conclude that atropia paralyzes much more through its depressing action on the spinal cord than on the motor nerves, and that it has a direct paralyzing action on the cord, and does not affect it through its depressing action on the circulation. In atropia we have a drug which quickly paralyzes the reflex functions of the cord, but requires a much longer time to diminish the resistive power of the cord; hence paralysis precedes, and may even disappear, some hours before the onset of tetanus.

EFFECTS OF SULPHATE OF ATROPIA ON THE WHITE CORPUSCLES OF THE BLOOD AND ON THE BLOODVESSELS.—Zeller finds that the addition of a little sulphate of atropia to a half per cent. solution of common salt rapidly stops the movements of the white corpuscles of the blood. Irritation of the tongue of the frog with a one-tenth per cent. solution of sulphate of atropia causes dilatation of the small arteries with increased rapidity of blood-current, and the white corpuscles cease to adhere to the sides of the vessels, and no longer migrate. Schiffer suggests that this dilatation may be only that which ordinarily follows any local irritation.—*Virchow's Archiv.* B. lxvi. p. 384.

SURGICAL APPLICATIONS OF BORACIC ACID.—Dr Leonard Cane extols boracic acid as a dressing for wounds; he uses it in the form of a lint, cotton-wool, a concentrated watery solution, and an ointment. The lint is prepared by soaking lint in a saturated boiling solution, and drying; the cotton-wool is similarly prepared. The ointment is made by rubbing down a drachm of the acid with an ounce of simple ointment or benzoated lard.

The following are the advantages claimed by Dr Cane for boracic acid:—

1. It is an antiseptic which does not irritate and inflame, and so allows the natural processes of healing to go on without much interruption.
2. It is exceedingly simple in its application, and can be used apart from all the details required by a thoroughly antiseptic method.
3. It can be used in the shape of the lint, lotion, cotton-wool, etc., in combination with most other methods of treatment.
4. Its cost is trifling; and, though this is of secondary importance, it is a feature of the treatment which will recommend its employment in workhouse infirmaries, and in dispensary and parish practice.—*Lancet*, 20th May 1876.

In the Bellevue Hospital, New York, a scirrhus breast was removed in the usual manner. After the operation the patient suffered severely from pain in and about the wound, and was greatly relieved by the application of cloths wet with solution of boracic acid. Pieces of muslin were dipped in a saturated solution of the acid, and then dried. Before being applied they were dipped in water.—Quoted in *Lond. Med. Record*, January 1876.

ACTION OF CRESOTIC ACID.—The results of Dr C. F. Buss's experiments leave no doubt that cresotic acid is a most effective antipyretic remedy, corresponding in its action to salicylic acid or quinine. Cresotic or carbo-cresylic acid ($C_8H_8O_3$) is derived from cresol or cresyl-alcohol (C_7H_8O) in the same way that salicylic acid is from phenol or phenyl-alcohol (C_6H_6O), by passing carbonic-acid gas into cresol (or phenol) containing metallic sodium. The cresotic acid crystallizes from its hot watery solution in colourless prisms. It

is sparingly soluble in cold water, readily in ether, alcohol, and alkaline solutions. Ferric chloride produces the same violet colour as it does with salicylic acid.

Sodium cresolate, administered in doses of about $1\frac{1}{2}$ to 2 drachms, give rise to a bad taste in the mouth, but to no other disagreeable sensation than occasionally humming in the ears, and, very rarely, deafness after a few hours.—*Pharm. Centralb.*, 1876, No. 273.

Cresotic acid lowers the temperature and the frequency of both pulse and respiration. It produces a sudden fall of temperature in fever, whilst the diminution produced by quinine is slow and gradual. Kolbe has demonstrated the antiseptic properties of cresotic acid.—*Berlin Klin. Wochensch.*, 1876, No. 3.

MEDICINAL USES OF SULPHUROUS ACID.—In the *Medical and Surgical Reporter*, 13th May 1876, Dr J. W. Botkin extols the use of sulphurous acid in the treatment of enteric fever, his attention being first directed to the subject by a paper in Braithwaites' Retrospect by Dr G. Wilks. Dr Botkin claims for the acid that "it acts as a specific upon the fever-poison, arresting the further development of that poison, and, by controlling the arrest long enough, exterminates the fever." Of thirty cases treated with sulphurous acid, he lost but one patient, who was a fragile consumptive girl. He usually gives the acid in lemonade, from three to fifteen drops every four hours, continuing the administration until the tongue is perfectly clean. When the discharges are very troublesome, the pulse high, and the skin hot and dry, he adds opium, veratrum viride, and nitre, according to the age of the patient. In almost all cases where the acid was discontinued too soon, a relapse occurred.

Allusion should be made to the paper of Mr J. Balfour in this Journal for August, in which he advocates for country practice, where the usual appliances for antiseptic surgery are not available, the use of the sulphurous acid wash, as originally recommended by Dr Dewar of Kirkealdy. In the proportion of one in twelve of water, it at once alleviates pain, minimises suppuration, is easily applied, and facilitates dressing the wound, while it costs almost nothing.

SULPHURIC ACID IN NECROSIS.—In the *Dublin Journal of Medical Science* for March 1877 a paper in the *Boston Medical and Surgical Journal* is quoted in which the history is recorded of a case of necrosis of the alveolar process which was cured by the daily injection of aromatic sulphuric acid, in the proportion of a drachm to the ounce of water, into the substance of the spongy swelling that surrounded the diseased bone. The teeth were very loose, and the case was one that apparently called for operation. Under the above treatment, combined with the use of tonics and an animal diet, the teeth gradually tightened, and in a year the cure was complete.

CARBOLIC ACID AS A LOCAL ANÆSTHETIC.—Bergonzini states that he has succeeded in opening abscesses without pain by means of a solution of two parts of carbolic acid and one of glycerine left in contact with the skin for three or five minutes. He proposes to try its efficacy in superficial neuralgias.—*Riv. Clin. de Bologna*. Quoted in *Dub. Jl. of Med. Sci.*, April 1876.

CARBOLIC ACID IN THE TREATMENT OF THROAT AFFECTIONS.—Dr James Cuthill states that for more than twelve months he has exclusively treated all cases of diphtheria and of ulceration of the tonsils and fauces by means of the carbolic-acid spray, except that, in the more severe cases, solid nitrate of silver was also employed. He had but one death in about thirty cases. In relaxation of the uvula and other non-ulcerative conditions, and in scarlatinal sore-throat, several excellent results were obtained by this treatment. The strength of the solution used is from one in forty to one in twenty, according to age of patient and severity of the symptoms.—*Brit. Med. Jl.*, 29th April 1876.

LOCAL APPLICATION BY SPRAY OF CARBOLIC ACID AND CREOSOTE IN CHRONIC BRONCHITIS, ETC.—In cases of long-standing chronic bronchitis with profuse yellow purulent expectoration, Mr Anderson Finlay has never known the local application of carbolic-acid, creosote, or tar fail to diminish expectoration and allay the cough. A few applications of carbolic-acid in the form of a spray will invariably remove the foetid odour from the expectoration. In this particular, carbolic-acid is superior to creosote; but the latter exerts a more astringent effect on the mucous membrane. He prefers Siegle's inhaler for the administration of the spray. He generally commences with a weak solution of creosote—two minims to the ounce of water—and gradually increases it to twice that strength. Whether the benefit derived is partly due to absorption of the drug by the mucous membrane, Mr Finlay will not say; but as he has never seen any change in the colour of the urine, or any other constitutional symptom whatever, even after its use for some weeks, he is inclined to attribute its value entirely to its local application.—*Practitioner*, March 1877.

Dr Moritz states that he has found great benefit from the use of carbolic-acid spray in the treatment of catarrhal diseases of the respiratory organs. He uses a spray of a two per cent. solution of the acid. He explains the action of the acid by supposing that cases of catarrh are in many instances of an infectious, probably parasitic nature.

Dr Masing has obtained good results in the treatment of obstinate cases of whooping-cough by the carbolized spray.—*St Petersburg Med. Wochenschrift*, 11th Nov. 1876.

SUBCUTANEOUS INJECTION OF CARBOLIC ACID IN CONSUMPTION.—Dr Schnitzler has injected carbolic acid subcutaneously in over 100

cases of consumption. He administered one or two centigrammes of the acid once, or sometimes twice, daily. The result in the majority of the cases was a reduction of the fever. Sometimes the injections appeared to palliate the cough and expectoration. Dr Schmitzler considers that carbolic-acid injections are as effective against hectic as quinine, if not more so. He has never met with an untoward result from the subcutaneous administration of carbolic acid.—*Weiner Med. Presse*, Nos. 32 and 35, 1876.

TREATMENT OF ACUTE RHEUMATISM BY PACKING WITH CARBOLIC ACID.—Several cases of acute rheumatism are recorded as having been treated satisfactorily at St Francis Hospital by means of packing with blankets wrung out of a very dilute solution of carbolic acid. The treatment is a modification of the method practised at the Mount Sinai Hospital. It consists in adding an ounce of carbolic acid to a pailful of warm water, and saturating blankets with the solution before applying them. Marked relief follows the application.—*New York Medical Journal*. Quoted in *Lond. Med. Record*, April 1876.

INJECTION OF CARBOLIC ACID IN THE TREATMENT OF ACUTE RHEUMATISM.—Senator has obtained marked success in the treatment of acute articular rheumatism by subcutaneous injections of carbolic acid, as suggested by Kunze. He employs a one or two per cent. solution, and has never had the slightest accident with it. He is of opinion that it acts by developing a local anæsthesia of the region submitted to its influence.—*Berl. Klin. Wochenschrift*. Quoted in *Dublin Jl. of Med. Sci.*, April 1876.

INJECTION OF CARBOLIC ACID IN NEURALGIA.—Dr Merton of Neuwedell reports four cases of severe neuralgia which were rapidly cured by one or two hypodermic injections of a two per cent. solution of carbolic acid.—*Allgem. Med. Cent. Zeit.*, 6th Sept. 1876.

Part Fifth.

MEDICAL NEWS.

CHAIR OF MATERIA MEDICA.—Dr T. R. Fraser has been appointed by the Curators to occupy this important chair so long associated with the name of Sir R. Christison, distinguished alike as a physician and toxicologist.

CHAIR OF CLINICAL SURGERY.—In addition to the candidates mentioned in our last, it is reported that an English provincial practitioner is also in the field. A local reputation in general practice will surely never lead to his selection over the heads of surgeons whose surgical reputation is European.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Venomous Animals.* By Sir J. FAYRER, K.C.S.I.,
M.D., F.R.SS. L. and E.

ANIMALS that possess the power of secreting and ejecting a poison, the effects produced by inoculating this secretion in man or other animals, and the appropriate treatment, will be briefly described in this paper. Poisons generated in diseased, enraged, or otherwise disordered animals, or such as may be formed after death by decomposition, or those by which teeth, claws, spurs, or other weapons of carnivora, predaceous birds, and fish or invertebrata, may be accidentally contaminated, are not included: for these refer to descriptions of rabies—hydrophobia, animal poisons, septicæmia. Nor are the effects produced by eating the flesh or drinking milk diseased or disordered by any cause included. It is known that the use of certain articles of food—certain states of health—changes during breeding, and in decomposition, may render the flesh or secretions of living creatures unwholesome, or even poisonous, but for descriptions of these refer elsewhere.

VERTEBRATA.

Mammalia.—The higher orders of vertebrata apparently have no venomous representatives, though the male monotremes, *Echidna*, and *Ornithorhynchus paradoxus*, are armed with a perforated tarsal spur, communicating with a crural or popliteal gland, which seems analogous to the poison apparatus in other creatures; no authenticated case of poisoning by this weapon, however, is on record, and its true use seems not to have been yet determined. Evil result following a puncture from this weapon, or from teeth, claws, or spurs of this or other mammal, may rather be attributed to the puncture than to an inoculated venom.

Aves have no known poisonous representative. Ill effects from wounds inflicted by their claws, beaks, or spurs may be referred to the lacerated or punctured nature of the wound, or to accidental contamination by extraneous septic matter.

Reptilia furnish the most numerous and important examples of venomous animals, and these are limited almost entirely to the

order Ophidia, which has three subdivisions: *O. colubriformes*, innocuous, *O. colubriformes venenosi*, and *O. viperiformes*, venomous. These are distributed widely over the globe, land and sea. The most venomous are generally denizens of warm climates.

The poison apparatus of a snake consists of a composite racemose gland, situated in the temporal region, which secretes a clear, slightly viscid fluid, that is poured through a duct into a grooved fang situated on a movable maxillary bone, capable of erection and reclination, to a greater extent in viperine than in colubrine snakes, by the action of muscles which push forward the ectopterygoid and maxillary bones, raise the fang, at the same time compress the gland and eject the poison through the duct into the groove in the fang; it is thus hypodermically injected into the bitten part.

The fangs are longer, more curved, more movable, and more formidable in viperine than in colubrine snakes—they are deciduous, and when lost by accident or by the process of shedding, are quickly replaced by reserve fangs that lie loose in a fold of mucous membrane. On the loss of a fang the most advanced of the reserves quickly takes its place, becoming ankylosed to, and moving with the maxillary bone.

The groove is on the convex aspect of the fang, and opens near the point for emission of the venom. There is an opening at the base of the fang, into which the poison is shed from the papillary orifice of the poison duct. This at the time of emission becomes closed in by a fold of mucous membrane, so that the poison is directed into the groove in the tooth.

Viperine snakes can recline or erect each fang independently of the other. This power is limited in colubrine snakes. The difference may be well seen in *Naja tripudians*—cobra; and *Crotalus-horridus*—rattlesnake. The poison is secreted in considerable quantities; half a drachm may be collected from a fresh and vigorous cobra. It is a clear, slightly viscid fluid, and very deadly in its action, probably more active in some snakes, quantity for quantity, than in others, and varying in activity in the same species or individual, according to season, temperature, state of health, etc. It acts most rapidly when injected into the blood; but it can be absorbed through mucous and serous membranes, as seen by its poisonous effects when applied to the conjunctiva, the stomach, the peritoneum. It may neither be applied to the lips nor taken into the stomach with impunity, and sucking a snake bite is by no means free from danger, though if the saliva be quickly ejected and the mouth washed, the danger is probably small. It contains an active principle, which has been described as echidnine, viperine, crotaline. Analysis has shown the poison to be very nearly like albumen in composition. It is most active in its action on warm-blooded creatures, but it takes effect in all. It appears, however, that poisonous snakes are very insensible to

the venom of other species of poisonous snakes. A cobra is not poisoned by another cobra's venom, but is probably affected by that of other species; and so with the others. But innocuous snakes, other reptiles, amphibia, birds, mollusca—indeed all life—succumb to it. Further analysis of the poison is needed. Though differing in activity and slightly in mode of action, the *modus lœdendi* is essentially the same in all snakes.

The action of the poison is local and general.

Local.—Pain, partial paralysis of the bitten part, ecchymosis, swelling, and if death does not rapidly follow, infiltration of other and distant parts, cellulitis, sloughing.

General.—Depression, fainting, nausea, hurried respiration, vomiting, exhaustion, lethargy, loss of co-ordinating power, paralysis, loss of consciousness, hæmorrhagic discharges, relaxation of sphincters, coma, convulsions, death. If the quantity of poison injected be small or its nature feeble, the earlier symptoms may give way and recovery take place. Snake poison acts by paralyzing the nerve centres—sometimes the peripheral distribution of the nerves, and by altering the constitution of the blood. It takes effect through the circulation, and if inserted into a large vessel, such as the jugular, humeral, or axillary veins, it will cause almost instant death—the heart's action stopping, systolic spasm.

The respiratory centres, the spinal cord, the peripheral nerve distribution may all be affected; in ordinary cases death seems to take place by arrest of the respiration, the heart's action continuing for some time after apparent death. The convulsion or coma that precedes death is due to the circulation of venous blood. The muscular fibre itself would appear in some cases to have its contractility impaired or destroyed. The poison also acts septically, producing at a later period sloughing and hæmorrhage. There are certain points of difference in the action of viperine and colubrine venom. In the former there is greater tendency to hæmorrhage than in the latter. Experiments on animals showed, that generally after death from cobra poisoning the blood coagulated firmly, whilst after death from viperine poisoning the blood remained permanently fluid. In most cases of death in man the blood has been found fluid even after cobra poisoning. Snake poison is also to a certain extent a poison to protoplasm, at all events it arrested the action of infusoria, and was not without effect on ciliary action. The results of its influence on amœboid movements of blood-corpuscles was not definite.

There is reason to believe that the numerous agents that have been recommended from the earliest times as antidotes are useless, and have no such properties as those ascribed to them.

The rational treatment of snake poisoning is that of endeavouring to prevent the entry of the virus into the circulation, to support the failing nervous force if it have entered, and to aid in its elimination by all possible means.

The application of a ligature applied tightly between the bite and the heart, the immediate excision or destruction by cautery or caustic of the bitten spot is essential, and such other local measures subsequently as appear necessary.

The constitutional treatment requires that the strength should be supported. Stimulants, such as alcohol and ammonia, have always been in repute, and probably with justice, though not in the sense to which the term antidote is frequently applied. Next—and if the respiration be failing, the use of artificial respiration should be resorted to. Elimination by the skin and kidneys should be encouraged and promoted by stimulating diuretics. The patient should be kept warm. It is not reasonable to make him exert himself by walking about; he is already sinking from nervous prostration, and forcing him to exhaust himself more is not likely to do good. Ammonia has always held a high place among remedies in snake poisoning, and its injection into the veins has been warmly advocated in Australia, and seems to have met with success there that it had not in India. In cases of moderate severity, and happily many are so, remedies with careful nursing and tending may prove successful, but where the bite has been thoroughly effected by the cobra, daboia, rattlesnake, *craspedocephalus*, *cerastes*, and others, the prognosis is very unfavourable; in no case, however, should efforts be relaxed until the last.

There is often uncertainty as to the kind of snake, its condition, and the extent to which its fangs were used. The great shock or depression which follows a snake bite may be in a measure due to fright, and will, on reassurance, pass away. The marks of two well-defined punctures attest the insertion of two fangs, and if the snake has not been seen, may enable one to form an opinion as to its character. Many of the innocuous snakes are fierce, and bite vigorously, but their numerous teeth leave different marks to those of the poison fangs.

There are exceptions to this rule; a few innocent snakes have the anterior maxillary teeth developed like poison fangs, but bites from them are not very likely to occur.

In a brief notice of this kind it is not possible to enter into much detail, but it may be well to note some of the characters that distinguish the venomous snakes. The form and arrangement of their teeth, and an examination of the mouth, will always reveal the true character. On opening the mouth of a venomous colubrine snake, such as *naja* or *bungarus*, two well-developed fangs will be observed, one on either side, and close behind it there may be seen one or two smaller teeth; there is no row of teeth along the outer side of the mouth, but a double row will be found on the palatine surface.

In the viperine and crotaline snakes, a large fang will be found

on either side, and a double palatine row. There are no small fixed teeth behind the fangs as in colubines, but in a fold of mucous membrane at the base of the fangs, both in vipers and colubines, a set of loose reserve fangs will be found.

In Hydrophidæ the fangs are arranged like those of the cobra, but are very minute, and no reliance can be placed on any mark made by them. The circumstances under which a bite is inflicted will generally help to indicate the kind of snake.

Harmless snakes have a double row of equal or nearly equal-sized teeth in the maxillary and palatine bones. There are certain innocent colubrine snakes that have long anterior maxillary teeth that might cause doubt as to the nature of the bite, but such are very exceptional.

There is nothing (except the hood in Najadæ) in colubrine snakes peculiarly characteristic, in their general aspect, of their venomous character; at first sight for ordinary observers it is difficult to say whether they are poisonous or not. Indeed, several of the innocent have a more repulsive aspect than poisonous species.

The viperine and crotaline snakes are remarkable for their broad arrow-shaped heads, often without shields, their thick bodies and short tails. They have thick, swollen looking lips, from the large fangs underneath them; and the nasal pits in Crotalidæ are very conspicuous. The Hydrophidæ are recognised by their compressed bodies and tails. Their peculiar heads, which in some species is very small, the valvular nostrils, and the absence, except in one genus, *Platurus*, of ventral scales. They are obviously aquatic, and are always found in the sea or on the shore. Space will not admit of more than a general indication of the genera, and of the geographical distribution of the venomous snakes.

These belong to the families Elapidæ, Hydrophidæ, Viperidæ, Crotalidæ. Elapidæ is a large group, widely spread over the Indian and Australian regions, and in America. It contains the truly venomous snakes, such as ophiophagus, naja, bungarus, hoplocephalus, pseudechis. The genera naja, ophiophagus, bungarus, pseudonaja, xenurelaps, doliophis, magrophis, and calophis are Oriental, and in Japan. An ophiophagus has been found in New Guinea. Cyrtophis, elapsoidea, and poccilophis in Africa. Elaps in America, but not in the West Indian Islands. Diemenia, acanthophis, hoplocephalus, brachiurophis, tropidechis, pseudochis, cacophis, pseudonaja. Denisonia and vermicella are Australian. The two first in the Moluccas and New Guinea. Ogmodon in the Fiji Islands (Wallace). There are 100 species.

Family HYDROPHIDÆ.—These are sea snakes, and probably all very poisonous. They have a wide range of distribution in the Indian and Australian seas, from Madagascar west to Panama east.

Genera.—*Hydrophis* has numerous species, and probably many yet undescribed. They are found in the Indian seas about Formosa, and in Australia. *Platurus*: 2 species; Bay of Bengal, New Guinea, New Zealand. *Aipysurus*: 3 species; Java, New Guinea, Australia. *Disteira*: 1 species. *Acalyphis*: 1 species; S.W. Pacific. *Enhydryna*: 1 species; Bay of Bengal, New Guinea. *Pelamis*: 1 species; Indian and all Eastern Seas. *Emydocephalus*: 1 species; Australia.

Family VIPERIDÆ.—In India, Ceylon, Africa, Europe. The common viper *Pelias berus* has a very wide range, from Portugal to the Island of Saghalien (Wallace); it is poisonous, but not deadly. The daboia of India and Ceylon, echis of India, puff-adder, cerastes of Africa, are deadly vipers.

Genera.—*Vipera* has 2 species, extending (Wallace) over Palæarctic and Ethiopian regions, but not in Madagascar. *Echis*: 2 species in India, Persia, North Africa. *Atheris*: 3 species; confined to West Africa.

Family CROTALIDÆ.—The pit vipers, a numerous group, containing some very deadly snakes. The craspedocephalus of the West Indies and the rattlesnakes of America. They are unknown in the Australian and Ethiopian regions.

The genera are:—*Craspedocephalus*, of which there are seven species, in tropical America and the West Indies; some are very poisonous. *Cenchrus*, *crotalophorus*, *uropophorus*, *crotalus*, in North America, from Canada and British Columbia to Texas; one species, *Crotalus horridus*, extending to South America. *Trimeresurus*, 16 species, all in India, Ceylon, Africa, Formosa, Philippines, Celebes. They are poisonous, but not nearly so much so as are the rattlesnakes. *Peltopelorus* and *hynale* in India. *Calloselasma*, Siam, atropos, Java. *Halys*, 3 species; Tartary, Himalayas. These are not very poisonous; though they may cause severe symptoms, are hardly able to destroy life.

Amphibia.—None are known to possess a poison apparatus like that of ophidia, but toads and salamanders secrete a fluid in glands along the back, connected with the integument, which yields an actively venomous principle capable of causing local irritation, and when injected into the blood, death, preceded by symptoms indicating action on the cerebro-spinal nerve-centres. Dogs seizing the toad, *Bufo vulgaris*, have been observed to suffer from swelling of the lips and salivation; and a case of death is related in a French journal, 29th March 1865, of a child in whom an abrasion of the hand came in contact with the secretion of a toad; death was preceded by vertigo, vomiting, fainting.

Injected into guinea-pigs, small birds, and other animals, violent symptoms and death soon follow. It is a viscid, milky fluid, with a slight yellow tint and peculiar odour; it is exuded, or may be pressed out from glands behind the orbits. Zalesky has shown that the land and water salamanders, *S. maculatus* and *Triton cristatus*,

and probably others, have also the power of secreting venom, and his experiments prove that it contains a very active principle—salamandrine, and that its action on the cerebro-spinal nerve centres is energetic.

It appears that these poisons, like those of ophidia, though effective on others, have no action on their own species. It is probable that all species of these families have the same active principle in their glandular secretions, though in different degrees of intensity.

I am indebted to Dr Leibrich of Berlin and Dr T. Lauder Brunton, F.R.S., for the accompanying abstract of what is known on the subject of poisonous amphibia.

Abstract of Paper by Zalesky on Poison of Toad, Triton, and Salamander.

“Poison of fishes depends upon their food, and is not always present, *vide* Signatera on ‘Fish Poison Disease,’ *Social Science Review*, July 19, 1862.

“*Bombinator igneus* is poisonous, its poison is probably the same as in salamander. Three poisonous salamanders: *Salamandra maculata* = land salamander, *Triton cristatus* = water salamander, *Salamandra venenosa* (Barton) Daudin, *Histoire Naturelle des Reptiles*, vol. viii. p. 229.

“Land salamander has different names: *Lacerta salamandra*, *Salamandra maculosa*, *S. terrestris*.

“‘Researches on Toads,’” John Davy, *Phil. Trans.* 1826, p. 127; Gratiolet and Cloëz, *Compt. Rend.*, April 21, 1851, t. xxxii. p. 592. Secretion of salamander in birds caused convulsions, opisthotonos, and death. In animals, laboured respiration, weak convulsions, recovery. They say secretion has a strong odour and marked acid reaction. Secretion of *Rana bufo* killed birds in five to six minutes without convulsion.

“There was also stupor from poison of toads and of earth salamanders. Injected under skin of foot of tortoise it caused paralysis of the limb after some days, which did not disappear in eight months. The poison when dried preserves its qualities indefinitely. It contains an alkaloidal substance which causes excitement, then irritability, then paralysis, death. In all birds killed by it the semicircular canals were found filled with blood.

“Vulpian, *Mem. de la Soc. de Biolog.*, 1856, p. 122, found in dogs and guinea-pigs triton poison caused progressive weakness without convulsions, although twitchings of individual muscles, and weak respiration and heart’s action. Membranes of brain congested. No vomiting. Not poisonous for tritons. Intense local irritant to the eye.

“Land salamander causes convulsions. Appears to act on spinal cord. Much weaker action on the heart than the poison of triton.

“Poison of toads, *Bufo fuscus* and *B. viridis*.—In dogs—violent

vomiting, staggering gait, convulsions, death. In guinea-pigs—efforts to vomit, convulsions more violent than in dog, but were intermittent, and only became constant shortly before death; then opisthotonos, grinding of teeth; death in $\frac{1}{2}$ to $1\frac{1}{2}$ hour. Symptoms in warm-blooded animals may be divided into four stages: 1, excitement; 2, relaxation; 3, nausea or vomiting; 4, convulsions. Given internally to a dog it only causes vomiting, and animal recovers.

“Poison does not affect irritability of nerves or muscles. *Post-mortem* examination in dogs showed heart motionless, filled with blood, lungs pale, heart contracted when galvanized. In frogs, toad poison causes convulsions, emprosthotonos, paralysis, contraction of pupil. Death in one hour. The poison paralyzes the movements of heart in frogs. It does not affect toads. The poison of toads kills tritons. The poison of tritons kills toads. The poison of land salamander kills toads and tritons. It is not known whether the poison of toads and tritons kills land salamanders.

“*Zalesky's experiments.*—Milk-like secretion of salamander obtained by scraping back with spoon. It only comes out under pressure, and easily spirts into eye, but animal cannot eject it. It is white, thick, strongly alkaline, acrid and bitter, slight smell not unpleasant, microscopically it is like milk. The granules disappear on addition of alcohol, ether, and acetic acid; when fresh secretion is put in water the greatest part remains undissolved in cheesy flakes. The water, however, becomes milky and turbid, and acquires an alkaline reaction and peculiar smell. The substance which causes the turbidity is not precipitated by acids or alkalies, but is by ether. The precipitate is soluble in hydrochloric acid, and is again precipitated by water.

“The watery solution coagulates at 59° , and gives white cheesy precipitate. On filtration the filtrate is clear, colourless, with pleasant smell, and *intensely poisonous*. It contains much phosphoric acid and nitrogenous substances. Dried over sulphuric acid in vacuo, it leaves amorphous brittle residue, which redissolves sparingly in water or alcohol. When completely dried it *loses* its *poisonous* power. When the concentrated solution is acidulated with hydrochloric acid, it gives on drying fine needle-shaped crystals, which are *not* poisonous.

“The watery extract may be boiled for a long time without losing its poisonous power. Phosphomolybdic acid (phosphormolybdausäure) precipitates copious yellowish white cheesy flakes from the hot watery extract. The precipitate is intensely poisonous. It was washed, dissolved in baryta water, excess of baryta removed by CO_2 , boiled, filtered, filtrate distilled in tubulated retort over naked flame, then completely dried over water bath in a current of hydrogen. Before the residue is completely dry numerous long needle-shaped crystals form, which disappear when the drying is complete, leaving a brittle, colourless, amorphous mass. This is

almost entirely soluble in water. The solution is strongly alkaline, is precipitated by chloride of platinum, and also by phosphomolybdic acid. It is exceedingly poisonous. It produces all the symptoms caused by the entire secretion.

“Even by drying in the stream of hydrogen a part of the base was so altered that a resinous body was produced, insoluble in water, soluble in alcohol, solution fluorescent, fluorescence disappeared after some time. The aqueous or alcoholic solution of this body when saturated with HCl , and dried on a water bath in a stream of H , leaves before it is dry long crystalline needles, which disappear when the drying is complete. The substance when fully dried contains hydrochloric acid. The free base when once dried retains its poisonous power for months.

“*Results.*—Samandrin is an organic base, not volatile without decomposition, easily soluble in water and alcohol, crystallizes with water of crystallization. Solutions are strongly alkaline, forms neutral salts with acids, precipitated from solution by phosphomolybdic acid, also by chloride of platinum which decomposes it. It is not decomposed by boiling its solutions, but is by gradual drying in air; when dry it is permanent.

“*Test.*—Precipitate by phosphomolybdic acid, dissolve, evaporate to dryness with PtCl_4 on water bath, a transparent amorphous blue mass insoluble in water forms during the drying.

“*Symptoms produced by it.*—After a few minutes (three to twenty-nine) the poisoned animal trembles, is restless, epileptiform convulsions occur, at first weak and confined to single limbs. The animal moves, but goes backwards, instead of forwards; there are violent convulsions of the muscles of mastication (especially in rabbits), and marked salivation, most when the fresh secretion has been used. The convulsions increase; there is opisthotonos, the animal can no longer sit, but falls in convulsions to the ground with head bent back. The eyes are open, the pupils much dilated and insensible. The animal seems insensible to all irritation, the respiration is weak, the pulse irregular, but strong, the muscles relaxed. During the convulsions the activity of the heart is unaltered, but respiration completely suspended. They last only one to two minutes at most, then there is rest, and then another often stronger than before, so that the animal is thrown clean into the air. Death occurs from exhaustion, with symptoms of paralysis. Rigor mortis comes on quickly, blood very dark, often bleedings in lungs, heart and veins full, heart pulsates after respiration has ceased. Brain normal, only great congestion of it and liver.

“In fish it produced rigidity of body (quiet respiration) and death.

“In dogs, given by mouth, salivation, restlessness, vomiting, convulsions limited to posterior part of back and feet, intermittent, sudden like an electric shock. Vomiting and convulsions increased, *pari passu*, and convulsion affected whole body. During

intervals between the vomiting the convulsions were less violent ; but with nausea or vomiting they increased, and there was opisthotonos or pleurosthotonos.

"In frogs—in two minutes respiration quickened ; in eight to ten, irregular, laboured, and with long intervals. Muscles of belly, neck, and chin take part in the respiratory movements. After fifteen to twenty minutes more, convulsive movements of single muscles, especially in back and extremities. These come and go instantaneously like electric shocks.

"Emprosthotonos and rest alternately ; sensibility gone. After four to six attacks, complete paralysis, with twitchings in single muscles. This condition may continue two to three days before the frog dies. The nerves and muscles retain their irritability. The symptoms are not altered by ligature of the aorta in belly of frog. Poison does not seem to affect the heart very much."

Pisces.—Several fishes are provided with an apparatus consisting of a cavity at the base of, or a sac and duct leading to a channelled spine, through which a more or less irritating secretion is ejected. No true poison gland, however, has as yet been certainly made out. This secretion is apparently connected with the secreting mucous system, and it is well known that in certain species it produces marked symptoms of poisoning, though never to the same extent as in the case of the poison of venomous snakes.¹ Fish armed with sharp or serrated opercular or fin spines can inflict severe and painful injuries liable to cause great pain, and to be followed by the grave symptoms attributable to the lacerated or punctured nature of the wounds, and these may be aggravated by the irritating nature of the mucus with which they are contaminated. In several, however, in addition to the spine there is a distinct receptacle in connexion with it, either in the form of a sac or duct, such as in thalassophryne, in a cavity in the spine itself, as in trachinus.—*Weever.*

In the case of others, such as the sting rays, which may produce severe wounds by their pointed and serrated spines, there is no distinct receptacle for the poisons in connection with them. The ill effects of such wounds are so well known to fishermen and others, that the spines are generally broken off as soon as the fish is caught ; and in France and Spain fishermen are obliged by police regulations to do this before the fish are exposed for sale ! Whilst it is well known that many spiny fish are capable of inflicting wounds that are dangerous from their lacerated and punctured character, it is recognised, also, that others increase the danger by the inoculation of an irritating fluid ; and the following are the most remarkable among them (*Day*) :—

¹ Experiments on the action of this poison are needed ; it is probable that in its action and composition of its active principle it would be found to resemble that of the salamanders.

I. Sub-Class.—TELEOSTEI.

a. Order—**Acanthopterygii.**A. Family—**TRACHINIDÆ.**Genus—*Trachinus*.

- | | |
|-----------------------------|------------------|
| 1. <i>Trachinus draco</i> , | } Great Britain. |
| 2. <i>T. vipera</i> , | |
| 3. <i>T. aranens</i> , | |
- Mediterranean.

B. Family—**SCORPÆNIDÆ.**Genus—*Synanceia*.

1. *Synanceia verucosa*, East Coast of Africa, Red Sea, Indian Seas.

All the individual members of this family are reported poisonous.

Synanceia, says Sir J. Richardson, is more dreaded by the people of the Isle of France than snakes or scorpions. The dorsal spines are the weapons, and they have a receptacle for poison at the base of each.

C. Family—**LABYRINTHICA.**Genus—*Polycanthus*.

1. *Polycanthus cuparus*, found in ditches and paddy fields along the Malabar and Coromandel coasts in India generally, within or not far removed from tidal influences. It hides under stones and among weeds; about $3\frac{1}{2}$ inches long.

b. Order—**Phyostomis.**Family **SILURIDÆ.**Genus—*Thalassophryne*.

- | | |
|---------------------------------------|---|
| 1. <i>Thalassophryne reticulata</i> , | } Coast of Panama. Grows to ten
inches in length. In these the
poison seems most highly de-
veloped. |
| 2. <i>T. maculosa</i> , | |
3. *Saccobanchus fossilis*, Malabar. Is much dreaded by the natives, who call it the scorpion-fish, for the irritating wounds it inflicts with pectoral spines; and wounds from the siluroid genus *Clarus* are much dreaded.

II. Sub-Class.—**CHONDROPTERYGII.**Order—**Plageostomata.**Sub-Order—*Batoidei*.Family—**RAIIDÆ.**Family—**NYGONIDÆ.***Rays.*

The latter sub-class are capable of inflicting severe wounds, but it is doubtful if there be any poison inserted into the wound. Probably there are others that are capable of inflicting severe envenomed, others merely lacerated or punctured, wounds. It is sufficient to indicate the certain danger of some, and the probable danger of other spiny fish. There is no ground for supposing that there is any poison apparatus connected with the teeth of fish. The effect of the poison is to produce severe burning pain at and beyond the injured part, with fever, and the intensity would,

no doubt, depend on the quantity of poison injected, and the state of health and constitution of the person at the time. The wound alone, without any poison, is likely to be painful and severe from its punctured character; and may require means to relieve tension, evacuate pus, or give exit to sloughs.

Ipecacuanha, alkalis, alum, ammonia, have all been recommended as useful internal applications to allay the irritating action of such poisons. Poultices of onions, or warm applications of opium or other sedative fomentations, are likely to be useful; and prompt surgical relief, if suppuration or cellulitis occur, is necessary.

The constitutional treatment needs no special description; it is such as would be indicated by the condition and progress of any other inflamed punctured wound. In case of depression of the heart's action, alcohol or ammonia would be indicated. Rest, quiet, and due attention to the state of the bowels and of elimination by the skin and kidneys, with careful regulation of the diet, should be observed.

INVERTEBRATA

MOLLUSCA.—*Aphysia punctata*, the sea-hare, a gasteropod, is said by some to produce an irritating secretion capable of causing urtication and even severe inflammation, and of causing the hair to fall off. It was used by Locusta in Nero's time as an ingredient in poisonous draughts, but it is doubtful if it be even an irritant.

ARTHROPODA, MYRIAPODA, family *Scolopendridæ*, or centipedes.—Body long, even to 12 inches, divided into horny segments; legs short, strong; feet numerous; antennæ 17 to 20 joints. They have mandibles or nippers, formed by a pair of dilated feet, joined at their origin, with perforated, hook-like points with an aperture near the apex, through which a poisonous fluid, secreted in a poison gland, sac, and duct, is ejected when they bite, which they can severely. This, in the case of the larger tropical species, is sometimes very painful, and causes considerable local irritation and even constitutional disturbance, and fever and delirium. Dr Linceicum says that he saw a case of a child terminate fatally in six hours; nausea, vomiting, and convulsions preceded death; body swollen and covered with livid blotches. That of the smaller kind generally causes only local and transient irritation. Centipedes are found all over the world nearly, in Europe and Africa, America, the East and West Indies and Islands, and in the tropics generally. Those of warm climates are the largest and most dangerous.

The following are characteristic genera and species:—

Scolopendridæ—Pallipes.

Crassa.

Ceylonicus, Ceylon.

Morsitans, West Indies.

Scolopendridæ—*Platypoides*, Brazil.

Placea, Brazil.

Variegata, Brazil.

Angusticollis, Old Calabar.

Tuberculidens, East Indies.

Leachii, Cape de Verd Islands.

Ceruleo viridis, New Holland.

Cryptops—*Hortensis*, British.

Lithobius—*Fortificatus*, British.

Cermatia, distinguished by its long spider-like legs.

C. Capensis, Cape of Good Hope.

C. Smithii, New Holland.

These are venomous, but it is not very likely that they should injure men. There are others, but it is unnecessary to detail them here.

ARACHNOIDEA.—*Scorpionidæ* or *Pedipalps*.

Scorpiones (true scorpions).—Have the abdomen segmented, the last six joints narrowed into a tail, terminated by a curved perforated spine or hook, with which they strike and wound. At its extremity are two small orifices, through which venom is injected from a gland receptacle and duct at its base.

The palpi are large, and formed like the claws of a lobster. Scorpions run about very quickly, carrying the tail curved over the body. They live in holes in the ground, under stones, logs of wood, in dark places. The tail is used as an offensive and defensive weapon. They seize small creatures, insects, with the palpi, and then pierce them with the sting. The venom is so active that it quickly destroys life.

Those of tropical climates are most active and poisonous. They attain to the length of from two to three, four, and six inches. The European genera are smaller and less active.

They exist in all tropical countries, but extend also into the warmer regions beyond the tropics. They are found in the East and West Indies, Ceylon, and other islands, Australia, Africa, Egypt, south of Europe, America. There are several genera, such as *Androctonus*, *Bathus*, *Brotheas*, *Ischurius*, *Væjosia*, *Opisth-ophthalmus*, and the following species—*Bathus ater*, *Androctonus*. *Bathus Cæsar* are good examples of the active kinds. *Europæus* and *Occitanus* are also venomous, but those of Europe are less active than the tropical forms.

Solpugidæ, *Galeodes*—has some individuals reputed to be venomous, but proof is wanting. They are like large spiders. *Galeodes araneoides* is said, but has not been proved, to be poisonous to man.

The effects of the scorpion's sting and centipede's bite have no doubt been exaggerated, but they may produce very painful, and in the case of the larger species, severe and serious symptoms in their character, not unlike, or even more severe than those of the wasp

sting: pain, swelling, in some cases numbness, vertigo, nausea, vomiting, temporary loss of vision it is said, swelling of the tongue, fever and death in delicate and feeble or sickly subjects. The local and constitutional symptoms may be severe in persons of irritable constitution, or otherwise out of health, but generally in the case of bites of ordinary scorpions or centipedes inflicted on healthy subjects, the suffering is local and soon passes away. A variety of remedies have been recommended. Probably the application of a ligature above the bitten part, or a cupping-glass, or suction of the wound, as in snake bite, might be useful. Some authorities recommend that the wound should be scarified, volatile ointment rubbed in, and an emollient poultice applied. Suction of the wound, the application of salt water, vinegar, ammonia, alum, ipecacuanha, spirits of camphor, eau de Cologne, tobacco water, turpentine, tincture of iodine, alcohol, the leaves of cruciferous plants made into poultices, solutions of opium and lead, or other sedatives, all seem to lessen pain and irritation. For the constitutional symptoms, the use of diffusible stimulants, opiates, or other sedatives may be necessary, and such surgical interference as inflammatory action inducing suppuration or cellulitis may render necessary.

It is a popular notion that the scorpion loses its venomous power after being at sea for a short time. This is probably not the case.

ARACHNIDÆ.—Spiders.—Some spiders are venomous, and certain of the larger tropical forms are capable of inflicting painful bites. The poison apparatus of spiders consist of falcæ or modified mandibles or jaws, the last joint of which is a hard curved fang, with a fissure near the point; there is an elongated poison sac and duct in which the venom is elaborated, and thence transmitted to the fang, by which it is inoculated into the flesh of its prey. The venom is a very active principle, and apparently capable of destroying the life of the small creatures on which the spider feeds rapidly. It also causes symptoms of poisoning in man and other animals. Probably all the species have some venomous secretion, but it is only the larger kinds that are obnoxious to man. It may be noted that whilst the fangs of one section of spiders move laterally, those of the *Mygalidæ* move vertically.

The *Mygalidæ*, or mouse spiders, grow to a large size. They are covered with a felt of hair, have vertical fangs, are very fierce, and are said to kill and eat small birds.

There are several species. Those reputed venomous are tropical.

Mygala Klieglii, Western Pampas.

M. versicolor, Brazil.

M. californica, America,
and others.

Therididæ.—*Lactrodectus malmignatus*, a black spider, with ten blood-red spots, South Europe, Spain; is said to be very

poisonous and even dangerous to man. It is probably identical with the Tendaraman of the cork woods of Morocco, which also has an evil reputation. There is an allied species in Corsica, Marmignatte (*Therididae* *tredecim guttatum*), also said to be very poisonous. This spider kills its insect prey, such as locusts, instantaneously. It has thirteen red spots. Others with similar powers are said to be found in Southern Russia and in New Zealand.

Lycosidae, or Wolf Spiders.—*Lycosa tarantula* is reputed to cause extraordinary symptoms, and has given rise to the stories about dancing; hence the Tarantula of Naples. It is poisonous, no doubt, but there is no reason to believe that its effects exceed a certain amount of local irritation.

There are numerous families, genera, and species of spiders; in all, probably, evidences of the possession of an irritating fluid may exist, but it is only in the larger kinds that they do so to any extent, and there is no very positive proof that even in tropical climates they can inflict the grievous injuries ascribed to them, though there can be no doubt that the venom is very fatal to the creatures on which they prey.

The treatment of spider bites would be similar to that for centipedes and scorpions.

The popular notions that the spider is very poisonous when swallowed, and that its web possesses valuable medicinal properties, are probably equally exaggerated, if not altogether untrue. It is to be noted, however, according to Kirby and Spence, that Ulloa mentions a species of red spider, perhaps mite, called coya, in Popayan, that is very poisonous, the juices of its body when crushed, and coming in contact with the punctured skin, cause tumours and even death. This is no doubt an exaggeration, but it is probable that the juices of not only those, but some others are acrid and irritating, and it is therefore better not to crush them when they are detected on the person, but to brush or blow them away.

In India and the tropics, a streak of almost erysipelatous redness of the skin coming on rapidly, is attributed to a spider. No one has yet defined the species; it is possible that it may be due to an analogous species to that just referred to.

Acarina or *Mites*.—Some families of the acarina have individuals that have the power of causing considerable irritation by some secretion ejected on the surface, or injected into the wounds they make, in their burrowing operations with claws or mouth.

Tetranychus autumnalis or the Harvest Bug (*Le Rouget*), *Leptus autumnalis*.—Is brick red in colour, and very minute. It is bred on plants, but leaves them to fasten on animals, especially the human species. They fasten on the skin and adhere firmly, they cause swelling and great irritation, severe itching when they are numerous, as they are apt to be. The intense irritation causes fever.

The symptoms are not unlike the sting of a nettle. Erythema or even blistering is caused. They burrow under the skin rapidly. They are covered with hairs, and effect entrance into the skin with their claws or palpi, and thus give rise to the great irritation, which is probably aggravated by some acrid excretion. They are found in Britain, France, and other parts of Europe. There are varieties of them found in the tropics. One is mentioned as occurring in Brazil that causes intense irritation, also in Honduras and on the Mosquito Coast, and in the West Indies.

The *Tetranychus Thalsahuat* is the name given to another form known in Mexico, which gives rise in the same way to great irritation, which continues for days. The mode of treatment is to extract the insect with a needle or point of knife, and then apply some soothing lotions.

T. irritans is the jigger of the Mississippi valleys; it causes great irritation in the same way.

Argas persicus.—A gamosid of this name, known also as the Teigne de Miana, venomous bug of Miana, well known in Persia. It is found in the houses, and it is said that its puncture produces serious symptoms—convulsions, delirium, gangrene, and even death. This is an exaggeration, though probably it is true that local irritation, and perhaps some constitutional disturbance, may be caused. It is blood-red in colour, spotted on the back, with white; feet yellow. *Argas moubata*, a native of Angola, is said to have much the same properties.

Argas talaje.—In Guatemala produces great irritation. It bites like an ordinary bug, and the punctures are followed by great irritation, swelling, and pain. It lives in holes in the bamboo walls, or such like crevices, and issues at night to attack the sleepers. They are called by the people talajes.

The *Ixodidae* or ticks are also the source of annoyance and irritation, by attaching themselves to the bodies of most animals; but there is no proof that they have any poisonous properties, so it is not necessary to allude to them further here.

Several others, *Anoplura* or lice, and *Sarcoptidae* or itch mites, as is well known, cause great irritation and disease, but this is due to the mechanical, rather than the poisonous nature of the wound; the whole subject will be found detailed under the head of Parasites.

Hemiptera or Bugs.—*Geocorysæ* and *Hydrocorysæ*, land and water bugs.—Some of these have irritating properties, and also offensive odour; they have a suctorial mouth armed with a grooved instrument or rostrum for piercing the skin.

Cimex lectularius the bed bug, causes much irritation, and in some persons inflammatory action in the bitten part. The effects are transient.

Notonecta, the water boatman, and *Nepa*, the water scorpion, common in pools of water in our islands, are also capable of inflicting a painful puncture.

Kirby and Spence speak of the *Cimex Nemorum* as causing nearly as much pain by its puncture as the sting of a wasp.

The wheel bug, *Reduvius serratus*, of the West Indies, gives an electric shock to the person it touches. St Pierre mentions a species of bug in the Mauritius whose bite is as venomous as the sting of a scorpion.

The *Benchucha*, or great black bug, of the pampas of South America, is more obnoxious, it is said, than the common bed bug.

Aphaniptera.—*Puleiidae*, or Fleas.—There are several families of this order. It is only necessary to refer to *Pulex irritans*,—the universal common flea. It varies much in size and colour; some are almost black and very large, and are found on the sandy shores of the Mediterranean. There are many species, such as *P. canis*, *P. musculus*, *P. vespertinus*, and others. *Pulex penetrans* of West Indies and South America, known also as the jigger or chigoe. It penetrates into the skin, and beneath the nails generally of the feet, causing great irritation. It will, if not extracted, deposit its ova, and thus give rise to severe irritation. The effects of the ordinary flea-bite are well known. No special treatment need be described. Prevention is better than cure. Though the irritation of flea-bites is chiefly due to the wound, there is reason to believe that this is aggravated by the presence of some irritating secretion.

Orthoptera are probably all free from venomous properties.

Diptera.—To this order belong the gnats. Mosquitoes, pipsas, sand-flies, gad-flies, are more or less dreaded for their bites. They have a proboscis composed of a grooved and flexible sheath, through which long, slender, sharp darts are protruded that pierce the skin, and no doubt inoculate some venomous secretion, though its nature is not known. They draw blood, raise white lumps or swellings; some, such as the pipsa of the Cossiah Hills, India, leave a livid spot of effused blood, that gives the person the appearance of a purpureal rash. They swarm in many countries, especially the tropics, generally near water. But they are not by any means confined to the tropics. Lapland swarms with them. The principal forms are the *Culex pipules*, *C. reptans*, common gnats, *C. mosquito*, *Culex laniger*, the mosquito, the flies, *C. tabanus*. Some of these are formidable insects, and are insatiable blood suckers. The tsetse or timb, *Glossina Morsitans* of Africa, is one of the most remarkable. The bite of this poisonous insect is almost certain death to the horse, ox, or dog; though it appears not to trouble man more than to cause slight irritation, which has no further effect on him, though in a few days the animal sickens and dies.

Oestrus, or the gad-fly, is troublesome to animals; but it does not, as a rule, molest man. Poisonous properties doubtful.

The *Tipulidae*¹ are for the most part harmless, though one of

¹ A small species of *Ceratopogon*, one of the midges, is of this family, and is often annoying in our islands.

them, the Hessian fly, *Cecidomyia*, is dreaded for its destruction of grain and wheat.

The *Simulium*, or Sand-fly.—The females only are irritating to man, the bite often giving rise to painful swellings. These insects, especially mosquitoes, are the pest of many countries, not only tropical, but even in Europe, and render it necessary that, to procure sleep, the person should be protected by a curtain.

The Pipsa is probably a *simulium*. It appears from the great irritation and the white hard swelling that follows the puncture of most of these insects, that some acrid secretion is injected into the wound.

In young full-blooded persons, especially recent arrivals in India or the tropics, the irritation caused by mosquito bites is often so severe as to give rise to violent inflammatory symptoms, resulting in suppuration or ulceration, and even gangrene, risking loss of limb, perchance of life. The application of common salt, solution of ammonia, soda, potash, lead, oil, ipecacuanha, alum combined with opium, allay irritation in the first stage. The more violent inflammatory symptoms are amenable to ordinary surgical treatment. Camphor, pulegium, lime-juice, applied to the skin are all regarded as preventatives. The term mosquito is rather vaguely applied to a great number of species of *Culex* and *Simulium*. In South America they are called *Zancudos*, long-legs, *moustiques*, *maringouins*, *temporaneos*, black flies, *mucha* in India. These names are given to different varieties, all very similar in their effects on man in different parts of the world. The *brulot*, or burning fly, of West Indies and America, is one of this family, and it is so called because its bite is said to resemble the puncture of a red hot needle. The *stomoxys calcitrans*, which is not unlike a common house fly in this country, is said also sometimes to cause local irritation. The gnats and mosquitos not only torment by their envenomed bites, but also by the buzzing and humming noise they make as they hover about their victims.

Hymenoptera.—A number of species that secrete poison are found among the different families of *hymenoptera*, the bees, wasps, ants.

They are distinguished from other insects by the presence of an ovipositor at the extremity of the abdomen in the female, which not only is used for depositing the eggs, but is in many species as a weapon for injecting venom. It consists of five pieces, two valves as a sheath, and three bristles which form a grooved sting. Through this groove formed by these three pieces the egg is passed, and the poison flows, or is injected into the wound. Those that use it for that double purpose are known as the *aculeate hymenoptera*. In these the ovipositor becomes a sting by being connected with a poison gland at its base.

Formicidae, the Ants.—*Formica smaragdina* and many others.—The sting of the ant causes considerable irritation, especially if the persons have been attacked by many. It has been suggested that

formic acid is the irritating principle. There are several venomous varieties and species of ants, black and red, and they are of various sizes. Some of the larger forms in the tropics are capable of inflicting a very painful injury. Some ants have no sting, but eject a fluid which irritates the skin with which it comes in contact. They are sociable insects, and are apt to attack in numbers.

Vespidæ.—The Wasps, Hornets.—The females and workers of *vespa* are provided with a poison sac and sting.

Vespa vulgaris, a type of the tribe Crabro. It lives in communities, which are very numerous. Its sting produces much irritation, pain, and swelling, especially when inflicted on the face, or where the cellular tissue is loose. When they attack in numbers the consequences may be severe.

The *Apidæ*, or true bees, or the *Bombidæ* or humble bees, have similar properties, and their sting has very much the same effect as that of the wasp.

The stingless honey bee, found both in the old and new world, is, as its name implies, harmless. Some of the parasitic Hymenoptera also inject a poison into the wound made by their ovipositor. The best known instance is that of the genus *Ophion*. The genus *Paripla* also injects a poison in the same way, and probably others of the *Ichneumonidæ* do the same.

Many remedies of a simple nature have been recommended to allay the pain and irritation caused by wasp and bee stings. Vinegar, eau de Luce, ammonia, solution of soda or potash, oil, indigo, eau de Cologne, alum, and all those recommended in scorpion stings, have been vaunted as useful. In case of venomous stings, where constitutional disturbance is induced, stimulants or sedatives may be necessary, and as the sting is liable to be left in the wound it ought to be picked out. In cases of wasp or bee stings in the mouth or throat, which may happen when children bite a peach or other fruit that conceals a wasp, severe consequences may arise from the œdema that supervenes, and extends to the glottis. An emetic is useful. With the ordinary treatment of œdema, laryngotomy may become necessary. In other cases, should violent symptoms supervene, surgical aid may be required to relieve tension, or give exit to matter. Such untoward results, however, are happily rare.

Brink says that *Mutilla coccinea*, a native of the warmer parts of North America, is said to produce loss of sense within five minutes after the infliction of its sting, and that life is in danger for some days afterwards.

Lepidoptera.—Burmeister says that the majority of insects furnished with a sting, as a means of defence, belong to the Hymenoptera. It is but recently that a stinging Lepidopterous insect has been found. The species is not mentioned.—(*F. Smith*.) The bee moth of the Cape of Good Hope is said to defend itself with a sting.—(*Kirby, Spence*.) Though the majority of the perfect

insects of this tribe are harmless, some of the caterpillars appear to be possessed of very irritating properties, residing in the fine hairs with which they are cased, and which being sharp and brittle, break off and remain on the skin with which they come in contact, certainly causing irritation mechanically; but also probably by the presence of some acrid substance concealed within the hairs. For instance, in Ceylon, a greenish hairy caterpillar, longitudinally striped, frequenting the leaves of *Hibiscus populneus*, probably of the genus *Bombyx*, which, alighting on the skin, causes as much irritation as the sting of a nettle. The larvæ of *Nerera lepida*, which feeds on the jasmine flowering *Carissa*, have similar properties. It is short and broad, of a pale green, with fleshy spines on the upper surface, each of which is charged with venom that occasions acute suffering. The larvæ of the genus *Adolia* are also armed with venomous hairs. There are probably many others. One, not uncommon in certain trees in the terai of the Himalaya, is a dark-coloured hairy caterpillar, that is apt to fall on people below and cause intense irritation. It is known as the Komlah, but the moth that produces it is not known.

Neuroptera, apparently, are free from venomous properties.

Coleoptera.—None are known to be injectors of venom, but there are several that have acrid secretions capable of exciting great irritation and inflammation, raising blisters, and if absorbed causing painful strangury and great urinary irritation. Such are *Mylabris Cichorii* of India, *Cantharis* or *Lytta*, or *Meloe vesicatoria*, *Lytta gigas* of Senegal, *Lytta vitata* of America, and *Lytta ruficeps* in Chili.

The *Brachinus*, or bombardier beetle, seems also to be provided with an acrid secretion, which it ejects against its prey; it is not, however, obnoxious to man. The nature of the action of the *Cantharis* is so well known that it is needless to describe it here.

Crustacea have no poisonous representative.

Vermes has no venomous species. The Leeches: *Hirudo*. Many species inflict a wound which in hot, damp climates may give rise to inflammation, causing a troublesome sore, but there is no reason to believe that they possess any venomous properties.

Echinodermata.—The long sharp pointed spine of some of the Echinida are capable of inflicting painful punctured wounds, but they convey no true venom into the wound. Whether, as in the case of some spiny fishes, there may be an irritating mucous secretion inoculated is uncertain.

Cœlenterata.—Some of the Medusæ—jelly fish—have the power of stinging. The poison apparatus is placed in certain tubercles on the surface. These contain a collection of granules, amongst which are small vesicles. Within these corpuscles or nematocysts a spiral thread is found, which bursts out on pressure. These corpuscles are found in the mucus exuded by the creature, and to these is attributed the urticating power it possesses. There

are several stinging species, some are found on our own coasts, others in other seas. It is the larger forms generally that are venomous, the small ones, if they are so at all, having no effect on man. *Cyanea capillata* of our seas, says Professor Forbes, is a most formidable creature, and the terror of bathers. It has a broad tawny disk, and a long train of ribbon-like streamers floating after it; it flaps its way through the waters, and whatever comes in contact with these trailing trains soon writhes in torture, the effect produced being not unlike that of the nettle.

Physalea pelagica, Portuguese man-of-war, has similar properties. It causes severe and stinging pain, extending up the limb, with feverishness, which has been known to continue for some hours, white wheals forming on the skin, like urticaria. The application of vinegar or olive oil is said to remove the unpleasant symptoms. Several of the medusæ possess these properties, and hence they have received the name of *Acalephæ*, or sea nettles.

There has been difference of opinion as to the functions of the thread cells. Some think that they are the agents by which the poisoning is produced, by penetrating the tissues. The threads being armed with a sharp barbed spine inflict the puncture into which the poisonous secretion is injected. Others reject this explanation. Allman thinks that there is penetration; the sudden ejection of a barbed sac against the soft tissues of the prey, which if these be soft enough allow the point of the sac to penetrate as far as the roots of the barbs, the act is followed by the ejection of the filament, for which the barbed sac has opened a passage.

He thinks it is impossible that the effects which follow can be produced simply by mechanical irritation, but that some virus is injected. That the creature can sting there can be no doubt, though the exact process by which it is effected may be uncertain.

The *Actinie*, or sea anemones, and the hydroid polyps, appear to possess a similar power, and are provided also with thread cells. They appear to be able to paralyze the small marine creatures that come within their grasp, or to cause urtication of the human skin when brought in contact with their tentacles.

The *Sagartiadæ* furnish examples of sea anemones with this property. The effects, however, of any of them are transient. In some parts of Europe or Norway the *Acalephæ* have been used therapeutically as counter-irritants, and being brought in contact with the patient by immersing him in a salt-water bath filled with these creatures.

It is by no means pretended that in the preceding description the subject of venomous animals has been exhaustively treated, or that all the forms of animal life so endowed have been described. The object has been to point out the principal forms, and to indicate generally the mode of dealing therapeutically with the effects of the venom.

ARTICLE II.—*Notes on Surgical Practice among the Natives in Shanghai.* By EDWARD HENDERSON, M.D. Edin., Municipal Surgeon and Health Officer, Shanghai. No. III.

(Continued from page 690, vol. xxii.)

IN my last paper I discussed briefly the subject of eye disease, and I now come by a natural transition to the consideration of diseases affecting the ears. These are said to be of common occurrence among the Chinese; and, as in the case of the eye inflammations, the native barbers are thought to be responsible for a good deal of the mischief. The cleansing of the auditory meatus is an important part of a Chinaman's toilet, and this is regularly effected by the barber after shaving the head. For this purpose he employs variously-shaped scoops made of bamboo, and is satisfied only when he has thoroughly removed the cerumen.¹ It is easy to conceive that such periodical scrapings may produce chronic thickening of the lining membrane, and that special forms of inflammation may now and again arise by conveyance of the *materies morbi* from one individual to another on the barber's tools. In the last report of the Shantung Road Hospital (1875), Dr Johnston gives a total of 356 cases of ear disease prescribed for in the dispensary practice during the year. These include 62 cases of earache, 260 of deafness, 10 of polypus, and 24 of otorrhoea. Foreigners in Shanghai make frequent complaints of the deafness of the natives, basing these chiefly on the fact that the Chinese show but little activity in avoiding carriages in the public street—often altogether disregarding the warning cries of the drivers. Making due allowance for the small feet of the women, for stupified opium-smokers, and for those who, in the winter months, protect their ears by specially contrived head-dresses and even by small ear-caps, I think foreigners have still some ground left for their complaints; but it must not be forgotten that carriages drawn by trotting ponies have been but recently introduced into China, being indeed at the present date confined practically to Shanghai.² The ability which the London *gamin* displays in "dodging" carriages driven at speed in the city is the result of an education commenced at a very tender age, and, indeed, regarded as an instinctive act of self-preservation, may, for aught I know to the contrary, be a faculty perfected only in successive generations of those who live in large towns. As proving, moreover, that this apparent want of intelligence on the part of the

¹ With a small narrow-bladed razor, he also shaves the hair from the entrance of the meatus.

² In Shanghai, the first carriage was started by a Mr Caldecott Smith in September of 1852, but several years elapsed before his example was followed by many. At the present date, the streets are crowded by wheeled vehicles of every possible description. The Shanghai streets are for the most part narrow, not permitting of sufficient separate accommodation being made for foot-passengers.

natives is at least not due only to deficient hearing, I may mention the fact that they show a similar want of appreciation of the movements of ships, accidents constantly occurring from the persistence with which the native boatmen insist on crossing the bows of vessels going under steam. I have myself often witnessed with surprise the almost suicidal dash that a native will now and again make in front of a carriage, whose rapid approach he has apparently watched with attention. It is difficult to understand the frequency of such occurrences save on the supposition that these people are unable to calculate pace which is as yet to them unfamiliar in its rapidity.

A somewhat remarkable injury to the hearing apparatus in a Chinaman came under my care lately. A coolie was admitted to the American Episcopal Hospital, in April last year, on account of intense earache and total deafness. He had, he told the native assistant, suffered for a long time from pain in his ears, which he was told by a native doctor was due to the presence of worms. To destroy these, he was recommended to use arsenic. Three weeks before admission, he had applied that remedy, introducing it in powder into each meatus. Hearing was quite lost, and a profuse, offensive, purulent discharge flowed from both ears. In washing on the right side, the incus was discharged, and the stapes made its appearance after the man had been about a week in hospital. On the left side, water injected into the meatus passed at once into the throat, and the small bones had apparently been already lost. At first, he suffered much pain; and as this abated complete double facial paralysis was gradually developed. I had never seen a case of the kind before,¹ and was so much struck by his appearance that I had him photographed, at a time when the muscles gave no response whatever to somewhat energetic faradization. The difficulty he experienced in eating was at this time his chief misery, and it was really pitiable to see the efforts he made to masticate his food, while supporting both cheeks with his hands. Treatment by electricity was impracticable, for after the first trial he refused again to approach a battery (even the taking of the photograph was a difficulty), and, owing to the deafness, it was impossible to reason with him, as he could neither read nor write. The paralysis gradually improved, and when he left the hospital, in the end of June, was materially less in degree. The loss of hearing was of course total and permanent.

¹ In the article on "Local Paralysis from Nerve Disease" in Reynolds' *System of Medicine*, I find the following:—"Double Facial Paralysis.—This is unquestionably a rare affection, and especially rare when the double palsy is solely dependent on nerve disease. Romberg and Dr Christison refer to cases of what may be termed simple bilateral paralysis of the face, while the seventeenth case in Dr Todd's lectures is a very remarkable example of paralysis of the portio dura on both sides connected with affection of the portio mollis; for the patient was 'perfectly deaf in both ears;' and the loss of function of both branches of the seventh pair evidently resulted from disease in the temporal bone."

Of operations performed on ears, I have nothing to record save the paring and stitching of lobes gradually divided by the weight of the heavy native earrings. This appears to be a common injury, and its repair is usually undertaken by the native assistant. If the stitches are inserted behind, and only partially through the thickness of the lobe, their marks are concealed—not, perhaps, a matter of much importance.

In the first of these papers, I made special reference to the unusual development of tumours, abscesses, and hernial protrusions, as distinguishing surgical practice among the Chinese. I propose now to consider these briefly in detail. At a time when the records of operations on abdominal tumours fill the journals, the size of even the largest of the external growths removed by surgeons sinks into insignificance, and I turn somewhat blankly from the doings of the ovariologists to the slender materials I have now before me. One case, however, stands out so prominently among the others, that I am tempted to give its history in full, more especially as it was my fortune to be the surgeon whose assistance was sought. I give it as originally noted in my case-book.

The field-labourer Dzie-ta-nien, from the village of Pao-san (some 15 miles distant from Shanghai), presented himself to-day (26th Nov. 1875) at the Shantung Road Hospital, desiring to be relieved of a large tumour. He has the appearance of a tolerably healthy countryman, of about the age he states—thirty-three. The tumour (Fig. 1.) is pediculated, and, in form, somewhat irregularly oval. The pedicle measures eleven and a half inches in circumference, its attachment being to the right side, from about the middle of the back to within five inches of the anterior superior iliac spine. Large veins can be distinguished beneath the skin covering the posterior border, and at least one large artery can be felt pulsating in the centre, of this attachment. The surface of the tumour is covered by a coating of gypsum (removed before the photograph was taken), applied by the man himself as a protecting shell. Where this has been chipped off, the skin-covering appears soft, distinctly hypertrophied,¹ and of a pinkish colour, which disappears on pressure. The circumference of the growth, taken vertically, (the direction of the longest diameter), measures roughly 3 feet 9 inches. Taken horizontally, it measures 2 feet 8 inches. It feels to the hand distinctly lobulated, and, while by far the greater part of it is undoubtedly solid, a few of the lobules seem to have undergone softening. Dzie-ta-nien states that the tumour first attracted attention when he was about twelve years of age, and that its increase was slow until about five years ago, when he calculates that it did not weigh more than two catties (about 2½ lb.). At that time it was “opened” by a native doctor, and subsequently its increase has been rapid. About two years ago, the

¹ This hypertrophy, and the general form of the growth, gave to the tumour a curious resemblance to a scrotum affected by elephantiasis.

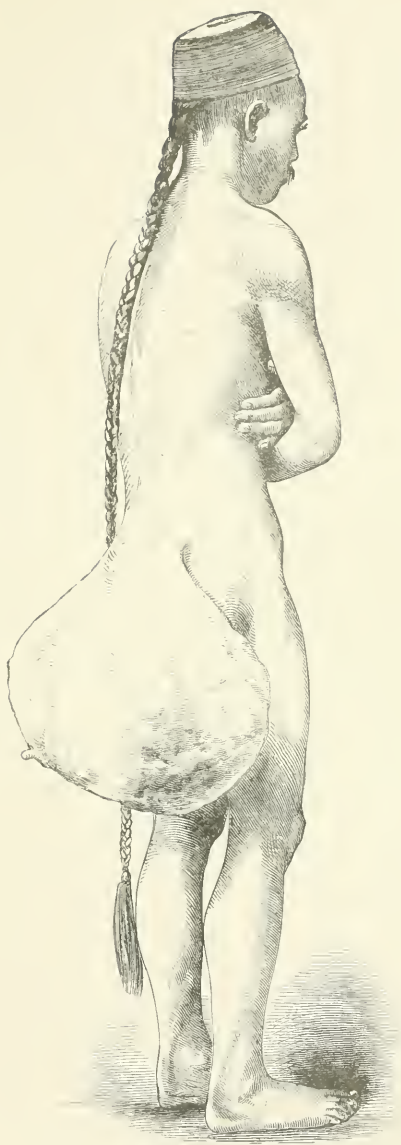


FIG. 1.—Engraved from Photograph.

weight compelled him to use a cloth sling as a support, and forced him to give up out-door work.

Shortly after, with the kind assistance of my friends Dr Little and Dr Henderson (Chefoo), I removed this tumour, first transfixing the pedicle and securing it by a whip-cord ligature. As a matter of convenience, and further to save loss of blood, I had the growth suspended to a tripod raised above the operating table. There was no hæmorrhage at the time of the operation, and but little afterwards, although I judged it prudent on the third day to remove the part left beyond the ligature. The man made a safe and speedy recovery, and, in spite of the apparent loss of skin, the cicatrix was by no means strained or unduly apparent. The tumour after removal weighed thirty-two pounds;¹ it was an ordinary fatty tumour, a few of the lobules having undergone a process of softening, which rendered them more or less diffluent.² The course of several vessels of large size was traced in its substance.

The removal of such very large tumours seems to be not altogether unattended with risk.³ I know of one death in Shanghai following an excision of the kind, in which hæmorrhage had an important bearing on the fatal issue. The patient, a boy of fourteen years of age, lost a good deal of blood during and after (from oozing) the operation. He died three days after the tumour was removed.

Of large fatty tumours seen, or removed by others, I note the following:—In one of the early reports of the Shantung Road Hospital (I have noted the case without a date), a man is described as presenting himself with an “enormous fatty tumour” hanging from the nape of the neck. Of this growth, the reporter writes:—“It must have weighed at least half a hundredweight, and was the largest tumour which has been seen here. Frequently vast tumours hanging even below the knees are seen, but this was like a large bag of rice on the man’s back, and he complained much of the great weight he had to carry about with him.” This man refused to submit to any operation, having, indeed, come to the hospital to get advice about some other complaint. In 1871, in the Hankow Medical Mission Hospital, a tumour was removed weighing 11½ lbs., which is described as “hanging from rather a thin pedicle,

¹ Sir James Paget, in his *Lectures on Surgical Pathology* (3d edition, 1870), says:—“I believe the largest (fatty tumour) in London is in the museum of St Thomas’s Hospital, which was removed from a man’s abdomen by Sir Astley Cooper, and weighed 37 lbs. 10 oz. One almost as heavy, which weighed 37 lbs. was recently removed by Mr Holden from the back of a man aged sixty-seven.” Sir James notices the capricious growth of these tumours—their “uncertain periods of acceleration and arrest”—a point illustrated in the history of my case.

² Regarding this, Dr Green, in his *Introduction to Pathology*, says:—“Softening may also occur (in fatty tumours) from a mucoid change;” and the term “mucoid” would apply to the softening which I have observed.

³ I refer here to tumours distinctly separated from the surrounding tissues; the risks attending the removal of the “continuous” variety of fatty tumours are of course well known.

which ran parallel to the spine of the scapula, and reaching to the level of the elbow." The hæmorrhage at the time of the operation was "rather severe."

Of smaller fatty growths, Dr Shearer, in 1870 (also in Hankow), reports the removal of two: one weighing 3 catties (about 4 lbs.), from the interscapular space, in a woman aged 39; and one weighing nearly 4 catties (about $5\frac{1}{2}$ lbs.), from the nape of the neck, in a man aged 50.

Of cystic, fibroid, and fibro-cystic growths, I can recall to memory some rather formidable specimens. A fibro-cystic, or fibro-cellular tumour of the lower jaw, is prominent among these.

The man, the subject of this growth, was a professional beggar, and used his unsightly disease as a powerful means of obtaining charity from the public. For a long time, I had tried through the police to get hold of him, to have at least a photograph taken, when one day last year he turned up, unexpectedly, in the Gutzlaff Native Hospital, and submitted himself there to an operation for the removal of the tumour. By the kind invitation of Dr Jamieson, the surgeon to the hospital, I was present at this; but a careful examination, after a partial dissection of the skin, demonstrated the impossibility of excising a growth which had seriously implicated the upper part of the larynx, and Dr Jamieson was compelled reluctantly to close the wound and desist. For the photograph from which Fig. 2 was taken I am indebted to Dr Jamieson, who, I believe, intends to publish the case in the forthcoming number of the *Customs Medical Reports*. This engraving recalls the two woodcuts which illustrate fibro-cellular tumours in Mr Heath's work on *Injuries and Diseases of the Jaws*—tumours removed by Mr Heath himself and by Mr Syme (*op. cit.*, 1868, pages 287 and 288).



FIG. 3.—Engraved from Photograph.

Fig. 3 represents a cystic growth successfully removed by Dr Johnston last year, in his hospital in the Shantung Road. Such tumours are of common occurrence among the natives. As

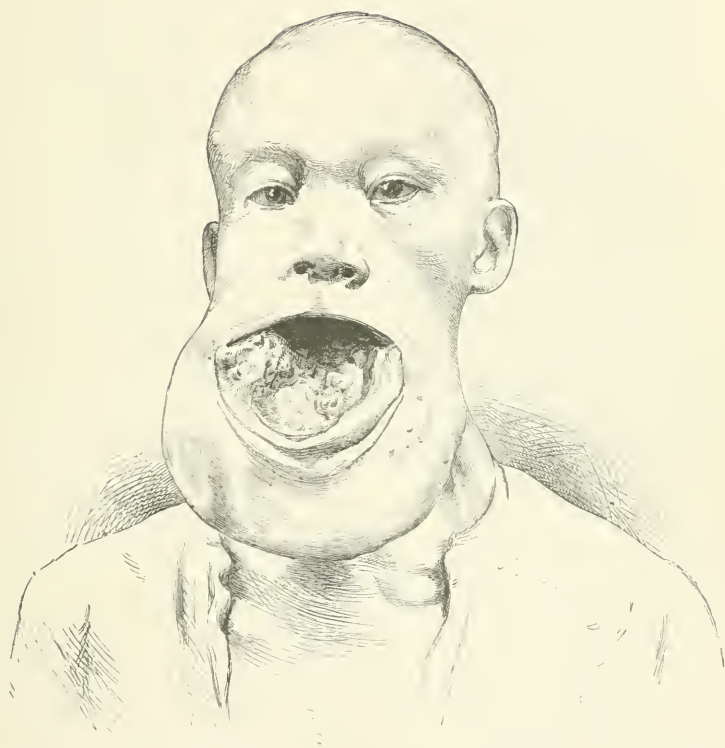


FIG. 2.—Engraved from Photograph.

they lie above the parotid gland their connexions are never very deep. I have seen several of large dimensions.



FIG. 4.—Engraved from Photograph.

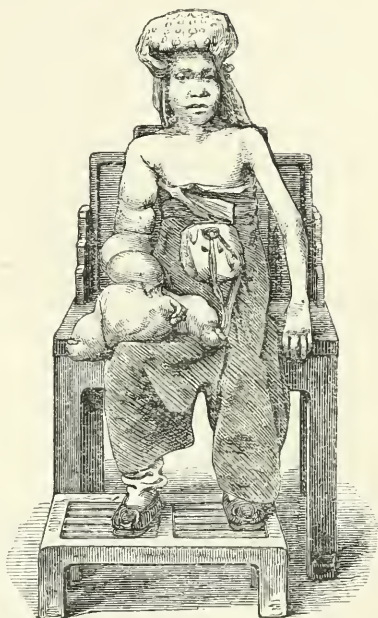


FIG. 5.—Engraved from Photograph.

Fig. 4 shows a curiously large and symmetrical expansion of the lower end of the thigh-bone, supposed to be due to malignant disease. The man applied to the Shantung Road Hospital, but refused to submit to any operation.

Fig. 5 represents a somewhat remarkable hypertrophy affecting the right hand and arm of a boy of sixteen. This case merits a detailed description, but I am myself unable to give this from personal observation. The lad was in Shanghai last summer, and was exhibited in a house in the suburbs of the settlement. Dr Macgowan (Shanghai) saw him, and considered the growth to be an example of the "continuous" fatty tumour.¹ It was estimated to weigh about eight pounds. As the boy will probably return to Shanghai, I trust some day to obtain a better picture, and to be able to give some further account of the growth.

Malignant disease seems to be of as common occurrence in China

¹ Possibly an example of elephantiasis teleangiectodes; one of those cases in which "fat lobules predominate, and the structure feels more or less firm, and resembles more the molluscous or lipomatous tumour." (See description by Kaposi, in third vol. of *Hebra on Diseases of the Skin*, New Sydenham Society's Translation, pages 101-2.)

as in Europe. As might be anticipated, it usually presents itself in the native hospitals in such an advanced stage of development that operative interference is out of the question. I have a strong impression that the progress of cancer is less rapid, and attended with less pain, among the Chinese than among Europeans,—and this is perhaps what might be expected to result from the generally unstimulating and scantily-nourishing diet of the former. There is the obvious analogy of the comparatively slow and painless advance of cancer affecting the aged, when the general nutrition of the body is failing from defective assimilation.

Regarding abscesses, I may be brief, for after pointing out the frequency of their occurrence among the natives¹ and noticing the unusual dimensions to which they are allowed to attain by the sufferers before relief is sought, I seem nearly to have exhausted the subject. Last year, in the Hangkow Hospital, I opened two large painless collections of matter, one in the neck extending in front of the thyroid gland, which closely resembled a large goitre, and one in the groin descending into the tissues of the scrotum, which curiously simulated an oblique hernia. But peculiarity of situation and difficulties of diagnosis are matters which the aspirators and exploring needles of the present day have nearly robbed of interest, and I need not dwell on these. Liver abscess cannot be called a common disease in this part of China, and yet I have seen a good many examples in the Shanghai native hospitals. Comparing the results of these cases with what I have observed among my own countrymen, I should say that the native's chance of recovery is decidedly better than that of the foreigner.

An appeal to such statistics as I possess seems to prove this, but so much depends on the individual history of the cases that a fallacy is easily possible. In abscess of the liver, situation, causation, and character so greatly influence results, that unless I were able to compare like cases with like I could not regard the few figures I have at my command as of much value. From 1869 to 1875 (inclusive), the reports of the Shantung Road Native Hospital record 17 cases of hepatic abscess treated in the wards, of which 9 died and 8 recovered. In the General Hospital (where the patients are almost exclusively foreigners), the reports for the same period give 26 cases with 17 deaths. In foreign (private) practice, I have myself notes of eight cases seen during the same time (four in consultation), and of these only one recovered. With one exception, however, these were all acute and deep-seated. Last year I added one to this list, also acute and deep-seated, which recovered.

The large number of anal fistulas yearly treated in the native hospitals leads me to conclude that anal abscess is of frequent occurrence among the Chinese.

¹ Apparent, not only from the frequency with which surgeons practising among the Chinese are called on to evacuate pus, but also from the number of cases of sinus terminating in the soft tissues, which are met with in the practice of the native hospitals.

In September of 1875, I admitted a somewhat curious case of thoracic abscess to the Hongkow hospital. My patient, a male, aged 25, a native of Soochow, presented himself with two bruises, one in the third and one in the sixth right intercostal space, in front and about one and a half inches from the edge of the sternum. Pus was discharging from both of these openings in some quantity. A probe introduced through the upper wound slipped directly backwards for about five inches, and was then felt to lie in a cavity of considerable size. Through the lower opening the passage of the probe was less easy. It passed there, backwards and upwards, for about four inches. The man, after inflating his lungs, could, by holding his breath and straining, direct quite a considerable stream of air through both sinuses, especially the upper, from which he made the pus issue noisily in bubbles. This performance, he said, gave him a good deal of pain; but at first, whenever I examined him, he made a point of repeating it. He was much emaciated and very weak. At first, I was content to see what rest and good-feeding would do for him; but pus continued to form in quantity, and after several weeks, his health was in no degree improved. Every now and again, the sinuses would close; but when this happened his condition was worse than before, the tension of the abscess causing considerable constitutional disturbance, evidenced by heightened temperature and total loss of appetite. Under these circumstances—the lower opening being at the time closed—I introduced a full-sized drainage tube through the upper sinus. After this was done, the lower wound did not again open; but the discharge of pus through the upper seemed to increase, and the man continued to lose flesh and strength in a way which left me little reason to expect his recovery. For over two weeks, the daily (24 hours) discharge of pus through the drainage tube averaged thirty ounces,¹ the man lying constantly in bed and catching the matter as it escaped in a bowl. During this time, I made two attempts to establish a counter-opening, but failed in both. Contrary to my expectation, he did at last begin to mend; and in March of 1876 I noted that the upper sinus had finally closed, and that the man was well. Shortly after this date, and before I had time to examine him sufficiently carefully to report on his exact condition, he left the hospital, taking with him as a souvenir a jacket belonging to one of the hospital coolies. That act of ingratitude has doubtless prevented him from again paying me a visit, but he was in good health and gaining flesh rapidly when he took his departure.

Wherever hard work, involving the lifting and carrying of heavy weights, is the daily task of a scantily nourished people, there, it may safely be predicted, abdominal hernia will be a common complaint,—and it is under such conditions that the coolie-class in China

¹ My readers will remember the case of empyema recorded by Trousseau, in which the daily discharge of pus was about eight ounces, for about two hundred days,—the patient being a child of only six years of age.

supports life. Rupture is a disease of common occurrence in the practice of the native hospitals, and I am sure would be even more commonly met with, were it at all regarded by the Chinese as a serious affection, or one involving any risk to life.¹ The reports of the Shantung Road Hospital from 1869 to 1875 inclusive give 257 as the total number of cases of rupture treated among the out-door patients and in the wards;² but this ought to be regarded as a period of only six years, for 1874 stands alone as furnishing no example of the disease in the dispensary practice, and such an exceptional position is due to some mistake on the part of the native registrar,³ the average number for the other years being 41, to which no single year contributes less than 26. The natives have a truss of their own, which Dr Dudgeon, in one of his hospital reports, well characterizes as "heavy, clumsy, and ineffective." Judging from my own experience, I should think this appliance is very seldom used. Operations for the radical cure of rupture have from time to time been performed in the Shanghai native hospitals; I have myself operated five times, with, however, I regret to say, one death. In three of my cases, the bowel had not again descended when I last saw the patients; but only one remained sufficiently long under observation to enable me to record a real success. Dr Jamieson (Shanghai), in the *Customs Medical Reports* (No. 7 of the series), records a successful case, in which there was no return of protrusion seven months after the operation. Knowing what I do of the frequency of rupture among the natives, and the slight attention which it receives from the majority of the sufferers, it seems not a little strange that but two cases of strangulated hernia have been operated upon in Shanghai since my arrival in 1868,—yet such is the fact. Both of these operations occurred in the practice of the Shantung Road Hospital, and one of them cannot be regarded as an operation for the relief of strangulation in the ordinary sense, the bowel having burst through the tissues of the scrotum and appeared externally. It has been suggested to me that cases of the kind occur, although we do not see them in the hospitals; but this explanation I am sure ought to be accepted only to a very limited extent.

Fig. 6 is from a case admitted to the Shantung Road Hospital in July 1874. It represents a rare accident in connexion with rupture. The patient, an old man, had long suffered from a large reducible hernia, which was carried constantly in the scrotum. Shortly before admission, he was seized with violent vomiting and purging (cholera

¹ Throughout the empire abdominal rupture seems to be a common complaint. In Pekin Dr Dudgeon reports of it as frequently seen in the practice of his native hospital. In the report for 1871 he says,—“This affection is probably more extensive in China than in any other country—India not excepted.”

² 251 in the dispensary practice, and 6 in the wards.

³ It is so regarded by Dr Johnston, the surgeon to the hospital.

morbus) and during straining, the scrotum suddenly gave way and the bowel escaped externally. He was brought to the hospital thirty-

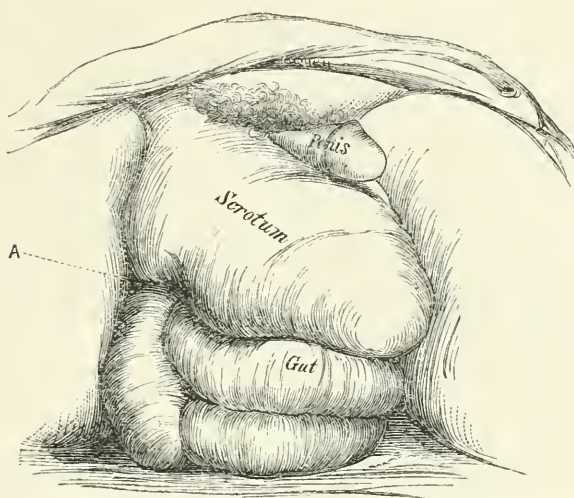


FIG. 6.—Engraved from Pen-and-ink Sketch.

six hours after the accident, and was then almost in a dying state. Nineteen inches of gut lay outside the wound, which was small, and grasped the protrusion somewhat tightly (see A). The bowel was much inflamed, but not gangrenous. The constriction was relieved by incision, and the gut returned, but the man gradually sank, dying eight hours after the operation. This is the case to which I have just referred as requiring operative interference for the relief of strangulation of an unusual kind.

(To be continued.)

ARTICLE III.—*Some Remarks on Fibrous Tumours of the Uterus.* By Dr ENGELMANN of Kreuznach.

(Communicated to the Obstetrical Society of Edinburgh, on 23d May 1877, by Dr Matthews Duncan.)

WITHIN the last nine years 72 cases of fibrous tumours of the womb have come under my observation. To my own patients may be added 297 cases of my late father's practice, of which I possess his strict remarks. The greatest part of our patients belong to the better-situated classes, therefore I came to different results from

what other authors have found, who had observed patients of different classes.

307 of our patients were married, 62 not married; a proportion of about 5 to 1.

In Germany the proportion of married to single women between 20 and 50 is about 9 to 7. I found that the proportion of married women, suffering from fibrous tumours, to single ones is 35 to 7, so that married women are more than 6 times more disposed to these growths than not married.

The number of cases is not considerable enough to give a faithful result, but I think we may be allowed to conclude, that Virchow and others are not right in saying that single women are specially disposed to fibrous tumours, and that the non-exercise of sexual functions is a cause of their forming.

With reference to the age, I found the following data:—

Of married women, under 20 years,	.	.	...
between 20 and 30,	.	.	34
between 30 and 40,	.	.	104
between 40 and 50,	.	.	143
above 50,	.	.	26
Of unmarried women, under 20 years,	.	.	4
between 20 and 30,	.	.	14
between 30 and 40,	.	.	18
between 40 and 50,	.	.	21
above 50 years,	.	.	5

Most of other authors found the greatest number of women affected with this disease between the ages of 30 and 40 years, the time of the most energetical exercise of sexual functions; I found most cases, at least of married women, between 40 and 50. The difference may be caused by most of my patients having suffered for some time from their tumours, and having been under treatment for some years before coming here.

Somewhat different I found the proportion if I looked at the period at which the symptoms characteristic of the disease first manifested themselves.

On this point I have made observation in 253 cases.

The symptoms began under 20 years,	.	.	6
between 20 and 30,	.	.	48
between 30 and 40,	.	.	124
between 40 and 50,	.	.	75

In more than half the number of the patients the first symptoms commenced between 30 and 40 years of age. A great part of my patients have certainly been suffering from small tumours for some years, before such symptoms appeared that made them conscious of some mischief; therefore I may say, that the period when sexual life is most active, is the time when fibrous tumours begin with predilection. It is doubtless that sterility is frequently the consequence of the tumours.

Of 307 married women—have never borne,	78
only miscarriages,	15
births and miscarriages,	66
only births,	148

About half the number had borne children. So we ought to say that fibroids are not such an obstacle to fertility as is generally regarded. But I believe this is not quite correct. I have no doubt that a good number of women who have borne, were quite well at that time, and the tumour began afterwards, perhaps in consequence of the childbed. To decide this question, I inquired very exactly in all cases that came under my observation within the last five years, if the women fell in the family-way after the first symptoms of the disease were felt. I have notices on 38 cases, in which at least five years were past from the first beginning of the symptoms. Five of my patients had never borne; three had miscarried before the symptoms began. I think that in these eight cases the tumour existed a long time before it gave symptoms, and was the cause of the sterility or miscarriage. All the other thirty women had borne before symptoms were felt. Eleven of these had never again come in the family-way, seven had undergone one or several miscarriages, and only twelve had borne after the beginning of the tumour. These twelve had borne 25 children. Six out of the twelve had borne 1 child, three 2, one 3, one 4, one 6. It is very striking how many pathological deliverances and irregular childbeds I found among the 25. Four times severe hæmorrhage took place after the deliverance; twice the child had a wrong position; four times the forceps was applied, because the labours ceased; once the placenta had to be removed artificially. The childbed, too, was very irregular in many cases, nine times inflammation broke out more or less severe; twice abundant hæmorrhages of long duration. All these patients were suffering from small tumours; only one had a very large growth, and it had lately much increased in size. The tumour was situated in eight cases in the fundus uteri, three times in the posterior, once in the anterior wall. If I look again at the details I mentioned, I find that only twelve out of thirty women had another deliverance after the tumour began; almost two-thirds of them got sterile. The twelve had borne 25 children. Eleven deliverances were pathological, and twelve childbeds irregular. Only five out of thirty women had regular deliverances and childbeds. These numbers are not considerable, but I think they show that the influence of a fibrous tumour on conception, bearing, deliverance, childbed, is much more serious than generally is supposed. I presume, in all cases of fibrous tumours there must be a cause, but not always are we able to find it out. Hæmorrhages in the tissue of the womb, or residuals of inflammations, may form the origin of the tumour. I do not believe that every clot of blood or every scar must be organized to a tumour, but I think it may be so, if a certain pre-disposition exist. Perhaps the disturbance of the circulation in the

womb, which remains for some time after inflammation is over, may help the growing.

To find out if my opinion is right, I examined 65 of my patients very precisely on this point.

Five of my patients reckoned the beginning of their complaint from a miscarriage. Four of them had been in good health before this accident happened, without any symptom of a disease of the womb; three had borne at the right term, and the childbed was normal. Two became afterwards again in the family-way, but pregnancy ended before the term.

In 13 cases the patients had the first symptoms after delivery and childbed. Only two had hæmorrhages before, the others were without any symptoms of disease of the sexual organs. All had undergone a dangerous delivery with hæmorrhages, or inflammation in the childbed.

In one of these cases it was very interesting to observe the effect of a direct and constant pressure on the womb. I found the retroflexed uterus fixed by a solid band to the posterior wall of the pelvis, and where this band was inserted to the womb, there was a fibrous tumour of the size of an orange.

Fifteen of my patients dated the tumour from an external insult that affected the womb directly or indirectly. In four cases, it was the raising of a heavy weight; three, a fall on the abdomen; one, a jump out of a carriage; four times, a severe cold; twice, over-exertion at the time of the menstrual period; twice, a severe typhoid fever. After all these accidents an inflammation or hæmorrhage took place. I do not enter more into particulars of these interesting cases, as I have published them already.¹

In 32 cases out of 65, which I have noticed, I could not make out any direct cause of the growth. Here the symptoms generally manifested themselves by degrees, and only the increasing pains, hæmorrhages, or other symptoms had induced the women to ask for assistance.

My experience in the treatment of the tumours naturally refers principally to the use of Kreuznach waters. On operative treatment I have but little experience. In two cases only I had occasion to accelerate the enucleation of tumours already beginning by incision of the cervix and the capsule. But I do not hesitate to adopt the opinion, that in all favourable cases operation is the only way of treatment that promises with certainty a complete cure. All other remedies are more or less uncertain.

The subcutaneous injections of ergotine, recommended by Professor Hildebrand of Königsberg, I tried in eight cases. I used this sort of treatment only with patients who took the mutter-lauge bath in the summer. In most cases the result was very satisfactory, and I can recommend this method, if used in right cases. The women must not be too weak and old, the tissue of the

¹ *Zeitschrift für Gynæk, u. Geb.* 1 Band, 1 Heft.

womb must still have some liability to contract, the muscles must not be too much degenerated. The tumour itself must at least, for some part, be surrounded by the substance of the womb, not too much grown into the cavity of the peritoneum or of the womb. The effect depends also upon the character of the tumour. The best results we will have with comparatively soft tumours, which have grown rapidly. The effect will be very little in cases of very large tumours, hard and longstanding, with old and weak patients. I had not the least effect in three of my patients, two of whom I still have under observation. In all three the women were old, more than fifty; two were married, but had never borne; one was unmarried; all suffered from very hard large tumours. In every case I made a very great number of injections in the period of about half-a-year, but the result was almost none.

I might explain this fact from the manner the ergotine acts on the organic muscles of the arteries and the womb. It brings on contraction of these muscles, and influences in that way the nutrition of the tumour. If the tumour has but very small nutritive vessels, or if the muscular tissue of the womb is almost lost, the effect of the contraction cannot be but very little.

In five of my cases, where the constitutions were more favourable, I had a very satisfactory result, principally with the young patients between twenty and thirty, suffering from pretty large tumours of quick growing.

Very disagreeable is the pain after the injection, which lasts sometimes for hours; occasionally I have seen erysipelas breaking out from the small wound; a painful infiltration of the cellular tissue, that lasts for some days, is very frequent after the injection; a painful contraction of the uterus is generally to be felt, sometimes as severe as labour pains. All this causes this sort of treatment not to be very much in favour with patients, at least if the evident effect makes itself awaiting. I also doubt whether the long use of such a strong remedy as ergotine may not have a bad effect on the whole organism. For we cannot expect that the effect of the ergotine is limited to the organic muscles of the uterus only and its vessels, and that all the other organic muscles of the system are not affected by it. It is still an open question if the change of nutrition in the different organs, resulting from the contraction of the vessels, may not have bad consequences. I observed sometimes want of appetite, diarrhoea, headache, giddiness, after the prolonged use of injections. I also noticed disturbances of the action of the heart, a very irregular intermittent pulse—symptoms so serious, that I interrupted the injections for some time.

The Kreuznach mutterlange baths act in a similar way as the injections of ergotine. If a strong irritation acts on the nerves of the skin in some extension, the organic muscles of the womb contract.

On this irritating effect on the skin depends the efficacy of Kreuznach baths in all forms of tumours and swellings—at least for the greatest part.

If we look at the elements of the mutterlauge baths we find that indeed they are powerful enough to produce a considerable and long-lasting irritation of the nerves of the skin.

The Elisabeth spring of Kreuznach contains as principal elements in 16 ounces of water—

Chloride of sodium,	. . .	73.00 grains.
Chloride of calcium,	. . .	13.25 „
Bromide of sodium,	. . .	0.30 „
Chloride of lithion,	. . .	0.075 „

A bath used at Kreuznach generally contains about 300 litres of water—equal to 600 pounds. So we have in a bath of pure mineral water—

Chloride of sodium,	$600 \times 73.00 =$	43,800 grains.
Chloride of calcium,	$600 \times 13.25 =$	7,950 „
Bromide of sodium,	$600 \times 0.30 =$	180 „
Chloride of lithion,	$600 \times 0.075 =$	45 „

We use very rarely pure baths in forms of tumours of the womb, but we render them stronger by addition of mutterlauge, which is an extract of the mineral water. The water being evaporated in large pans for the yield of the salt, there remains in the pans after the salt is taken out a yellow, oily liquor, of a sharp, bitter taste, and a very high specific gravity. In this liquor are dissolved all the elements of the water, with exception of a part of the chloride of sodium, in a very concentrated form.

Professor Bunsen, of Heidelberg, found in sixteen ounces of the mutterlauge 3146 grains of fixed elements, the principal of which are

Chloride of calcium,	2552 grains.
Chloride of lithion,	111 „
Bromide of sodium,	55 „

We add to the bath between three and ten litres of mutterlauge, sometimes even more. In a bath of six litres of mutterlauge, equal to eighteen pounds by weight, for instance, we have $18 \times 3146 = 56,628$ grains of fixed elements, and these are principally—

Chloride of calcium,	$18 \times 2552 =$	45,942 grains.
Chloride of lithion,	$18 \times 111 =$	1,998 „
Bromide of sodium,	$18 \times 53 =$	954 „

To this must be added the elements of the water of the bath; so we have in a mutterlauge bath of middle concentration not less than *fifteen pounds* of fixed elements, which all more or less affect the skin, *i.e.*, seven pounds of chloride of sodium, as much chloride of calcium, two ounces of bromide of sodium, and almost five ounces of chloride of lithion.

I will here, by-the-by, direct attention to the large quantity of

chloride of lithion found in the mutterlauge. From the time it was detected, the baths and the water is much used in all forms of gouty disease, and I am very satisfied with the effect.

We use the water also internally, but I think the principal effect of it will be to act as an aperient. More efficacious is it used externally in the form of bath, compresses, douches, and injections into vagina and rectum.

I give the bath generally every day; only, with delicate people it is better to have it every other day. For the beginning, the patients stay only a short time, about ten minutes, in the bath; every day a little longer, up to half an hour; in rare cases even as long as an hour. I give generally the three or four first baths without mutterlauge, then I begin with small doses, half a litre or a litre, and increase this dose every day, up to four till ten litres. The concentration of the bath depends upon the constitution of the patient, the sensibility of the skin, the nature of the complaint, etc. It is of great consequence to take care as to the temperature of the bath. If taken too warm, it acts very exciting, weakening; and generally a temperature of 92° F. will be most convenient. The bath is generally taken in the morning, after digestion of breakfast is over. Perhaps the time before going to bed would still be better, for it is very useful, and even necessary, that the patient should go to bed for some hours after the bath, to conserve the congestion of the skin, produced by the irritation of the water, for some hours. Another method to apply the mutterlauge are the compresses. I have found them very efficacious; they act like the full bath, by a prolonged irritation of the skin. Their effect depends upon the concentration of the water, and the time they act on the skin. If well applied, they must cover the whole abdomen, as well on the front as on the back, and must lie the whole night. The lotion with which they are impregnated generally may be as strong as half mutterlauge and half water—only, in cases where the skin is very insensible, as it is after the long use of ointments and iodine tincture, we use it stronger. After some time the reaction of the skin begins to be too great; a rash is coming out, and pustules are forming, so that it is necessary to interrupt the use of the compresses or to make them weaker.

Very often the use of bath-specula is recommended by medical men, who send patients here. I have used them formerly very frequently, but lately I have given them up entirely, for the benefit they bring is certainly inferior to the harm. Very rarely they are used in the right way; and if not well applied, they irritate the vagina and the uterus, and bring on leucorrhœa and even inflammation, as I have seen once. The douche I use very seldom, and only in the form of an irrigation, when leucorrhœa is very bad.

With predilection I make use lately of injections into the rectum. I take salt water progressively made stronger by mutter-

lauge in proportion of one part to eight or ten. The injection must not be more copious than two ounces, in order that it may be easily retained. It is applied by use of a small indiarubber balloon. The best time for it is after a motion of the bowels has taken place. The injected water is absorbed very rapidly. I use rarely the hip-bath, and only to soothe pains. Their effect cannot be very great in comparison with the full bath.

I have described the details of the treatment of fibroids of the womb at Kreuznach so minutely, because I wish that the artificial Kreuznach mutterlauge bath may be used in the same way. Very often I have occasion to see the mutterlauge is not used in the right way. Generally the baths are taken much too weak. A concentration of two or three litres is regarded as very strong, and such an artificial bath is not so strong as a plain salt-water bath used here; or patients are advised to use hip-baths with half a pint of Kreuznach mutterlauge. Such weak baths never are able to produce any good effect. If the artificial baths are used as strong as the bath here, I have no doubt the effect will be much the same. And very easily they may be tried at home, for the mutterlauge is sent abroad without any serious impairment of its virtue; only you must be careful that it is not adulterated, as happens very frequently. The best way to procure it is to have it sent directly from here by writing to the administration of the Kurhaus. It will also be much less expensive than if bought at the chemist's. Ten litres in a tin bottle you pay with three marks, sixty.

About 100 litres of lauge are wanted if each bath is used three times, as may be done without any serious loss of effect. We may only expect a good effect of the baths, if they are used a long time—the same as the injections of ergotine. If the patients have not sufficient time, it would be better not to begin at all, and spare time and expenses. Generally, I think, forty may be the right number; much more are not to be tolerated, because by the constant irritation of the skin an excitement of the nervous system breaks out.

In cases of large, hard tumours, it is even necessary to make a pause of some weeks after the first forty baths, and then to begin again. Sometimes one summer will not be sufficient to bring on a real, lasting, good effect; then it is necessary to use the baths for several succeeding years. In these cases I recommend my patients to take a good number of artificial baths during winter, so that the effect of the water may be more continued. The more persevering patients are, the better the result will be.

What is now the effect of the use of mutterlauge baths in the forms of fibrous tumours of the womb? Is it likely that such a tumour is absorbed entirely? Or are they right who say that no medicament whatever is able to bring a fibroid to absorption? I have no doubt that sometimes, in favourable cases, fibrous tumours are absorbed by the use of Kreuznach mutterlauge baths. I have

myself observed a good deal of cases where it was so, especially three, where no doubt could be that the diagnosis was right, for the tumour was situated in the posterior wall, and could be easily felt by the rectum. Some months after the use of the bath not a sign of a tumour could be found, not only by myself, but by others who had treated the patients before. Such a good result we may not always expect. But what we may expect in most cases, and what I have occasion to prove very frequently, is the swelling of the womb getting smaller, softer. And it is not only the engorgement of the uterus that gets smaller by the use of the water, but the tissue of the fibrous tumour itself, as I had occasion to observe very precisely several times. I would not say that always we have such a good result, but in all favourable cases we have. The patient must not be too weak, too bloodless; the tumour must not be too hard, too large, too long existing. In these cases we must be contented if the bad symptoms get better, such as pain or hæmorrhages, and if the tumour ceases, at least for some time, to increase in size.

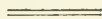
But even if the tumour itself is scarcely affected by the baths, they show their effect on the tissue of the womb; that is always more or less enlarged. So the general swelling gets smaller, and, in consequence, the pressure on the nerves of the bladder and the rectum gets less. The influence on the hæmorrhages is sometimes really surprising. If I resume my experiences on the effect of Kreuznach mutterlauge baths on fibrous tumours of the uterus, I find these results:—

1st, A complete resorption of the tumour is rare, and only to be expected in very favourable cases.

2d, In a great many cases the tumour itself diminishes in size.

3d, In cases of very large or hard tumours of long existence, they are not affected at all; but only the engorgement of the uterus.

4th, Always the general health of patients is improved.



ARTICLE IV.—*Dilatation of the Ureters and Renal Pelves. Hydro-nephrosis.* By ALEXANDER JAMES, M.D.

OBSTRUCTION to the escape of the contents of a hollow viscus, or of the secretion of a gland, causes dilatation, and this pathological process in the case of the kidney gives rise to the conditions of cystic kidney, and hydronephrosis, pyonephrosis, or surgical kidney. In these affections the position of the obstruction is different. In the former the small tubules are obstructed, causing a formation of cysts, varying in size and number, in the substance of the organ; in the latter the obstruction is lower down in the urinary tract, causing a dilatation, varying in degree, of the ureter and pelvis of the kidney.

It is this latter condition, and more especially hydronephrosis, that I now propose to discuss. The causes of it are very numerous. In his work on *Urinary and Renal Diseases*, Dr Roberts has collected particulars of many cases of this disease. In nearly all of them distinct mechanical obstructions in the urinary tract could easily be demonstrated, such as congenital imperforate ureter or urethra, or ureter rendered imperforate by the pressure of an abnormal renal artery, by cicatrization after ulceration, by twisting, etc. He notes, however, that cases have been reported where no obstruction could be discovered, and which seem therefore to be mechanically inexplicable.¹ The following case would belong, I think, to this latter class. I shall now describe it, and shall also propose a mechanical explanation, which I venture to hope may seem sufficient.

J. G. æt. 8 years, admitted to the Liverpool Infirmary for Children, 21st January 1875, suffering from incontinence of urine. His mother states that he was quite healthy till 3 years old, when as the result of an injury he had *phymosis*. After this had been pricked by a doctor, the swelling got better, and he seemed nothing the worse. He had then no incontinence. Shortly after this, however, he seems to have had a feverish attack, which, although not severe, weakened him very much. At this time, *i.e.*, about four years before his admission, the incontinence began. It has continued, and his mother states that he has never regained strength, and has grown very slightly since. On admission the boy looked thin and weakly, and not more than five or six years of age. The prepuce was contracted and almost completely adherent to the glans. He had no pain, but great incontinence of urine. There was increased frequency of micturition, often three or four times in the hour—only a few drops of urine were passed at a time, and the bladder was never distended. The urine seemed over the normal in amount, but the exact quantity passed in the 24 hours could not be ascertained. It was pale in colour—sp. gr. 1010, deposited a slight amount of pus and renal cells on standing, and the supernatant liquid showed traces of albumen.

Circumcision was performed on the 3d February, and repeated more thoroughly in the beginning of March. Slight temporary improvement followed both operations, but in April the boy was as ill as ever. He was getting gradually weaker till the 16th April, when, after a slight attack of diarrhœa, he suddenly became insensible, respirations rapid (48 per minute) and panting, pulse 116, temp. 97·4°. He became comatose, and died after remaining so for about 12 hours. On post-mortem the body was found healthy, with the following exceptions:—

The bladder was somewhat contracted, and its walls thickened. Its inner surface showed no signs of cystitis; there was no pus formation, but great roughness, owing to the hypertrophied mus-

¹ *Urinary and Renal Diseases*, Dr Roberts, 3d edition, p. 491.

cular fasciculi projecting rib-like into the interior, and forming small diverticula in many places. The cavity of the bladder when distended was smaller than natural, the walls about a quarter-inch thick. There was no stricture in the urethra, and the openings of the ureters through the bladder-wall were normally patent. Both ureters were greatly dilated in their entire length. Both kidneys were hydronephrotic; on section they showed the dilated pelvic chambers, replacing to a greater or less extent the normal pyramidal portions of the kidneys. The cortical portions were also encroached upon in several places. The capsules were slightly adherent. The renal sacculi and ureters contained urine, and there was a small sediment (consisting of pus and renal cells) in one of the dilated chambers of the right kidney. Microscopically its appearance resembled in parts that of the cirrhotic kidney. There was a great excess of fibrous tissue in the cortical portion, and the tubules, etc., were correspondingly obliterated. As this condition was manifestly the result of compression, it is interesting when considered in connection with Dr Johnson's theory that the fibrous appearance is simply the result of the obliteration and shrinking of the tubes and intertubular capillaries. Before considering the pathogeny of this case, I may mention that it is one of three similar cases, which I had the opportunity of seeing at the Liverpool Children's Infirmary, during a period of 14 months. In those two cases also, the cause of the urinary irritation was the condition of the prepuce. They were both thin boys, looking much under their ages. There was greatly increased frequency of micturition; the urine was pale, of low sp. gr., and containing albumen proportionate to the amount of deposit of pus cells. Both died, after manifesting the same marked uræmic symptoms. In only one, however, was I able to verify my diagnosis by a post-mortem.

In these cases, then, as the specimen shows, there is no apparent cause for the damming up of the urine which has dilated the ureters and pelves, but I think when we consider the symptoms during life, we have explanation sufficient.

For about four years the boy has been having almost constant trouble with his urine. He has had greatly increased frequency of micturition, amounting often to forty or fifty times a day, and he always wet the bed at night. This necessitated equally frequent contractions of the bladder, and as, to permit the urine to flow into the bladder, a relaxed condition of that organ is necessary, by every contraction the entrance of urine into the bladder was prevented, and damming up and consequent dilatation of the ureters and pelves resulted. That this is the pathogenesis in these cases, I have been led to believe on the following considerations:—

1st, The damming up must have occurred at the points of entrance of the ureters into the bladder, because the ureters are dilated, whilst the bladder is not so, but if anything contracted and thickened.

2*d*, The tracts of the ureters through the bladder-wall are normally patent.

3*d*, Contraction of the bladder is quite capable of preventing the entrance of urine into it, as the pressure put into action for the expulsion of urine is greater than a pressure which, applied to the ureter, will not only dam up its contents, but cause consequent complete suppression of urine; and when we remember the oblique course of the ureters through the bladder-wall, we can the more readily understand how this will take place. The expulsive force of the bladder, including, of course, the abdominal pressure (voluntary and involuntary), varies in different individuals; but from observation and experiment, I think that in calling it 2, 3, or 4 in Hg, I am not overstating, while it has been found that a pressure of 7-10 mm. Hg¹ (·4 in Hg), will greatly impair the secretion of urine, and a pressure of 40 mm. Hg (1·6 in Hg) will completely suppress the secretion of both its solid and fluid constituents.

It would be interesting to know the contractile power possessed by the bladder itself, but I have not been able to get an exact estimate of it. I find, however, that Donders² says that the detrusor urinæ is of itself able to overcome the resistance of the sphincter vesicæ. He has more than once observed in dogs in which the abdominal cavities were opened, that when an electric current was applied to the distended bladder, it contracted rapidly and equally, so that the urine was driven out in a strong stream.

4*th*, A similar condition of the ureters and renal pelvis is met with in old cases of stone in the bladder—"Surgical kidney," so called. If in these cases the stone has acted as the obstruction by preventing the escape of urine through the urethra, we find the bladder dilated also to a greater or less extent. It is often, however, contracted and thickened, and here the irritation of the stone has caused increased frequency of micturition, correspondingly frequent contractions of the bladder, and hypertrophy of its walls, and this tends to dam up the urine in the ureters. But the pyelitis which usually accompanies this affection has probably the great share in causing the dilatation, as by its occurrence the lining membrane of the ureters and renal pelvis is swollen, and by the purulent secretion their contents are increased in amount and consistence. Perhaps, also, the power of resistance to distension possessed by the ureters and renal pelvis may be diminished by the inflammation, and so the process of dilatation be further accelerated.

5*th*, I have had many opportunities of studying the urinary symptoms in children affected with incontinence of urine, so called. Those cases were mostly due to a hypersensitiveness of the bladder, owing to the reflex irritation of an enlarged or adherent

¹ Wundt., *Physiologie d. Menschen*, 3 Auflage, p. 434.

² Donders, *Physiologie des Menschen*, p. 484, footnote.

prepuce. In all the severe cases I noted that as long as the increased frequency of micturition lasted, the urine passed was (as far as could be ascertained) not markedly increased in amount, its colour was pale, and sp. gr. low. When a cure was effected, and the irritability of the bladder had disappeared, the urine became normal in its characters, thus :—

C., æt. 11, admitted for incontinence due to adherent prepuce. Urine pale, sp. gr. 1006, no albumen. Circumcision was performed, and cure resulted. On leaving the hospital the urine was of amber colour, sp. gr. 1027.

D., æt. 7, urine before the operation pale, sp. gr. 1007; afterwards amber, sp. gr. 1022.

J., æt. 8, was another patient, in whom the urinary symptoms seemed due to cold. When first seen, there was greatly increased frequency of micturition, although the total amount of urine passed in the twenty-four hours seemed not increased; it was pale in colour, and sp. gr. 1007, no albumen. After being kept quiet in bed for a week, the symptoms passed off, the urine became of a dark amber colour, sp. gr. 1025.

I have notes of similar cases, but it is not necessary to give them here. The following case is, however, more than usually interesting :—

W. M., æt. 2 years, affected with incontinence, etc., very severely. Urine pale, sp. gr. 1006. He was circumcised October 1874. Immediate and complete relief followed, and the sp. gr. of the urine rose to 1020. I had opportunities of watching this case for more than a year. He had frequent temporary relapses, and at these times the urine always became pale in colour and diminished in sp. gr., whilst as long as he was well the urine was normal in all its characters.

The pale colour and low sp. gr. of the urine met with in such cases can, I think, be easily explained. The urine being dammed up at the point of junction of the ureters and bladder, there results an increase of pressure of the urine in the ureters, renal pelves, and uriniferous tubules, and consequent impairment of its secretion and diminution of the transudation of the urea salts, etc., which go to make up the colour and specific gravity. If the secretion of urine were a process of osmose alone, we could explain this occurrence on the theory that it depended on the difference of pressure in the bloodvessels and urinary tubules; for on trying the effect of pressure on osmose through a membrane, it will be found that with a solution of a certain specific gravity and water of sp. gr. 1000, an increase of pressure on the solution will impede the entrance of water into it, and will increase the transudation of the salt into the water, and so add to its specific gravity; whilst a contrary pressure will increase the transudation of water into it, and diminish the transudation of the salt into the water, and so diminish its specific gravity. In the kidney, of course, the conditions are not

the same; we have the transudation of the watery portion taking place into the Malpighian capsules, and of the urea, etc., from the capillaries into the tubules; but we are warranted in concluding that similar results will take place from pressure. Thus, Hermann¹ found that urine secreted under a positive pressure in the ureter was less in quantity, and contained a smaller proportion of urea than when secreted under normal conditions.

Haidenhain² ligatured one ureter in a rabbit, and 24 hours afterwards injected into the circulation a solution of indigo. On killing the animal it was found that in the kidney of which the ureter had been tied, the amount of colouring matter which had passed into the tubules was less than in that of the opposite side, of which the ureter remained patent.

It has also been observed clinically, that in cases of blocking up of the ureter by a calculus, any urine which escapes, and which has of course been secreted under pressure, is pale, contains little urea, and is of low sp. gr.³

I regret that I have been unable to give more precise information as to the quantity of urine in the cases which I have mentioned, but the impossibility of doing so is readily understood on considering the age of the patients, and the nature of the affection. I mention this as I believe, that although there may be an impairment of the secretion of urine at first, by the damming up of the ureters owing to frequent micturition, I believe also that this damming up, if it last long enough to cause structural change in the renal pelves, tubules, etc, and from the fact of its being not constant but intermittent, may result in an increase of the total amount of fluid secreted; and I think we are free to consider that this increase in the total amount of fluid associated with the continuing, and probably from this same cause increasing irritability of the bladder, cannot but result in augmenting the process of dilatation.

The object of this paper then is to suggest—

1st, That increase in the frequency of micturition is capable of causing a greater or less damming up of the urine in the ureters, renal pelves and tubules, and consequent pale colour and diminution in the sp. gr. of the urine.

2d, That this damming up, if continued, will in time cause dilatation of the ureters and renal pelves, and a more or less hydronephrotic condition of the kidneys.

¹ See Wundt's *Physiologie*, p. 434. ² Pflüger, *Archiv* ix. 1, p. 10.

³ Dr Roberts, p. 27.

ARTICLE V.—*Note on a Mode of Saving Blood in Great Operations.*

By JOSEPH BELL, F.R.S. Ed., Surgeon to the Royal Infirmary.

HÆMOSTASIS, or temporary fixation of blood, has long been known and utilized in medicine and surgery. Dry cupping, and its good effects in certain cases, is an everyday example. Junot's boot, with its elaborate air-pump, is on a more ambitious scale, but on a similar principle.

Having, some weeks ago, to amputate at the hip-joint for a large and very vascular tumour of the thigh-bone, I used a method of temporary hæmostasis of extreme simplicity, and one which, in this case, proved very valuable, and may probably be still further utilized in similar cases.

Before the operation, I made a dresser raise the limb to be removed, so that, by position, it might empty itself. I then applied the elastic bandage to it in the usual manner. The other leg was allowed to hang over the edge of the table, and the elastic belt invented by Dr Foulis put lightly, as high as possible, so as to compress the venous, but not the arterial circulation. The limb speedily became congested, purple, and much swollen, being evidently much engorged with blood.

After the disarticulation, and when the greater vessels were secured, the patient's pulse was somewhat small; so, before closing the wound finally, the engorged limb was rapidly raised to a right angle with the pelvis, and the constricting band removed. The effect of this contribution of blood was at once marked. The pulse became full and strong, and several small vessels showed themselves in the stump.

This mode of temporary fixation has a double advantage in those cases of great amputations where a tourniquet cannot be used, or in cases of vascular tumours of neck or trunk—*first*, the engorgement of the limbs must unquestionably diminish the amount of blood in the other parts, and, in all probability, will tell first on parts *abnormally* vascular, hence there will, so far as it goes, be less blood to be lost during the operation; while, *secondly*, each limb can be used in turn as a very ready, easy, and rapid mode of suddenly stimulating the circulation at any moment of failure from hæmorrhage.

It is very easily applied, can be as easily and readily removed, and, so far as I have seen in this and other cases, has no disadvantage, either at the time or subsequently; and the patient, an adult, æt. 31, made a very rapid recovery.

ARTICLE VI.—*Notes of a Case of Scirrhus in both Mammæ.* By CHARLES STUART, M.D., L.R.C.S. Ed., Chirnside.

EXTENDED experience among surgeons has proved that they are more than ever averse to interfere with malignant tumours affecting the female breast. Many operations have been undertaken, which had been better omitted, and many tumours removed, which could have been got quit of without operation at all. In well-selected cases, however, there can be no doubt that timely surgery affords a means of prolonging the patient's life, and relieving her from much misery. The present case is one full of interest, and affords a good example of what a patient with the cancerous constitution strongly developed may pass through, and enjoy a fair amount of health between operations. I was consulted in the spring of 1870 by E. M. in reference to a hard tumour affecting the right breast. She had seen several surgeons previous to that time, and as they were all agreed as to the nature of the case, I removed the gland entirely, in July of that year, and she recovered perfectly. In May 1872, the left breast became affected in a similar way, and after careful consultation I excised it also. The patient recovered quickly and perfectly. In August 1874, a tumour about the size of a small egg, of a suspicious nature, appeared in the neck, at the upper and inner border of the sterno-mastoid muscle. Mr Annandale recommended its immediate removal. I hoped that my patient would have remained in town under his surgical care. She, however, returned to the country and requested me again to operate, as I had done on the two former occasions. I reluctantly consented to do so, and removed an undoubtedly malignant growth. There was considerable hæmorrhage at the time, and afterwards; but ultimately the patient did well. In May 1875, and again in April 1876, I have had to remove three more tumours of a hard cartilaginous nature from the neck. They appeared to be enlarged lymphatic glands, and were rather larger than pigeon-eggs in size. Dr John Wyllie, pathologist to the Royal College of Surgeons, kindly examined the growths microscopically, and confirmed our belief as to their malignant nature. The patient is at present in good health, and there is no glandular enlargement whatever to be felt either in the neck or axilla. The neck is much scarred by the repeated incisions; but taking everything into consideration, her general health is good. Several circumstances conduced to recovery in this case, 1st, The age of the patient is not very advanced, being only 45 at the present time; 2^d, A very firm, resigned demeanour, hopeful of restoration; and, lastly, she was favourably placed as regards fresh air and careful nursing. On all occasions, I had the benefit of the assistance of Dr MacLagan of Berwick. The patient had chloroform during the operations, and the case was treated antiseptically, as far as that system can be carried out by surgeons in country districts.

ARTICLE VII.—*On the Etiology and History of Leprosy.* By
W. MUNRO, M.D., London, late of Cupar-Fife.

(Continued from page 440 of last volume.)

ALL authors writing on the subject agree that leprosy was first carried to America by the negro race: Schillingius¹ says, "Cum mancipiis Africanis in Americam pervenisse videtur," and "endemiū Americæ morbum fuisse non puto;" and further on, "igitur non dubito quin ex Africa in novum orbem primum venerit."

Hillary² quotes from Town, an earlier writer, who says that the negroes brought it from Africa, and he was the first English writer who noticed joint-evil after Haly Abbas the Arabian. Peyssonel traced the importation of the disease into Guadeloupe in 1730³ to negroes; and, later on, Brunel⁴ mentions that it was brought from the coast of Africa to the Parana and Uruguay; while Bates⁵ mentions (vol. i. p. 238) that numerous importations of negro slaves had taken place to the banks of the Amazon during eighty years back, and (p. 241) that a body of Portuguese immigrants came from Morocco in 1769.⁶ Further on (vol. ii. p. 15), he mentions the great prevalence of leprosy at Santarem, a prevalence quite explained by his notice of the immigrations in the first volume.⁷

In support of the idea that negroes carried the disease to America, I may point out that they are known to have carried it to the Cape of Good Hope, where it was totally unknown among the Kafirs.⁸ They also carried it of late years to India, to Tranquebar, about 1830.⁹

I may say here that at the time of Columbus leprosy appears to have reached the Canaries, at least they were discovered in 1344, and a leper hospital was built in them in 1542; in Madeira, discovered in 1420, a leper house was built in 1656.¹⁰ In both these instances, no doubt, the disease existed some time before the leper houses were built, but both are examples of the long time

¹ *Lib. cit.*, c. xx. and xxi.

² Dis. of Barbadoes, p. 335.

³ See Jahn, *lib. cit.*, p. 84.

⁴ Obs. topograph dans le Rio de la Plata, etc., Paris, 1842, p. 46; and Hirsch, p. 311.

⁵ Naturalist on the Amazon, 1863.

⁶ This immigration was of Portuguese masters, belonging to an infected race, with their negro servants, coming from Morocco, a country where leprosy is an exceedingly common disease, and appears long to have been so. (See Jackson, "Account of the Empire of Morocco, 1809," p. 155, leprosy mentioned as *jeddām*); also Rolfe, in *Chambers's Journal*, Aug. 1874, p. 503; and Leared, *lib. cit.* (1876), p. 146.

⁷ This prevalence is noticed by Liveing (p. 56), who quotes Bates's description of the glorious climate of Santarem, as showing that neither bad climate nor want of food could have caused that prevalence. Strangely enough, he does not point out the evident cause I have mentioned above.

⁸ It is now most prevalent among the Hottentots (see Coll. Phys. Rep. p. xxx.) who are, and always have been, a filthy race, as Dampier, who in 1686 speaks of them as "*Hodmandods*," calls them.

⁹ Hirsch, p. 313.

¹⁰ Liveing, p. 52.

required for the importation of the disease. The Canaries were, no doubt, infected from Africa, Madeira from Portugal, which, however, it can hardly be questioned, was largely infected about the year 1500 by the great number of negro slaves (about 700 yearly) who were then imported¹ from Morocco, an importation which doubtless has had a great effect in causing Portugal still to suffer so severely from leprosy, as it was continued till nearly 1730.²

As further proof that leprosy was carried to America by the negro races, we have the fact that it has never been mentioned as existing among any of the aboriginal races *until after they had come in contact with negroes*. In fact, from Boothia Felix to Cape Horn it was an unknown disease, and still remains so among peoples and tribes who have never come in contact with negroes, or races directly or indirectly infected by them; for instance, it is not mentioned by any Arctic voyager as existing among the American Esquimaux. Anderson and King never speak of it in their notices of the natives of the Pacific side of North America. Hewit, after a life of some years among the natives of Nootka Sound,³ says nothing of it, and no voyager from Magelhães to Darwin has ever seen it in Tierra del Fuego or Patagonia, nor does it exist, I am informed by an old resident, high up the Orinoco. As to its former absence in parts of the Western Hemisphere in which it is now common, I may say that no mention is anywhere made of it by Prescott in his works on the Conquest of Mexico or Peru, or by Diaz de Castillo, who fought and plundered by the side of Cortes; nor is it mentioned as existing there in any of the works on the life of Columbus I have read; nor is there any mention of it among histories of the Aztecs, in which their migrations have been traced from far beyond California to Mexico, long before the time of Columbus.

This is a great contrast to the present time, when many parts of America suffer more or less from it, and when *there is more leprosy in the British West Indies than in any other part of the British dominions*, in comparison with the amount of population, and perhaps more than in any part of the world,⁴ except the Sandwich Islands.

It is now found all over the West Indies, though more severe

¹ Helps's "Life of Columbus," p. 27. He also mentions, p. 212, that negro slaves, "born in the power of Christians," were first allowed to pass to the West Indies in 1501. Columbus saw leprosy in St Vincente. Cape de Verde Islands.

² Moore's Travels into the Inland Parts of Africa, 1740, p. 9.

³ Captivity among the Nootkas in 1804.

⁴ It is possible that the great relative numbers I have quoted in my introduction, ranging from 1 in 280 in Demerara to 1 in 676 in Jamaica, may be exceeded in South China and Africa, but the want of statistics makes comparison impossible. However, the fact already mentioned that there was at least 1 person in 212 a leper in St Kitts in 1817, half a century *nearer* the time of their leaving Africa, and when there were many native Africans in the population, would tend to show that such is the case in Northern Africa.

in some islands than in others. Thus it is hardly known in Dominica,¹ while it is more common in St Vincent and Barbadoes, and also in Jamaica and the Bahamas. It also exists in Antigua, Montserrat, and Nevis, although no statistics of the actual numbers in these islands are obtainable. Again, in Grenada,² Tobago, St Lucia, and the Virgin Isles, it is said to be rare. Dr Liveing states that it is less common in St Kitts and Antigua than in Jamaica; but by the statistics I have already given, this is shown, at least as far as St Kitts is concerned, to be in all probability an error. As to islands not under British rule, it is known in Cuba and Porto Rico, in St Domingo,³ in St Thomas, St Bartholomew, and St Martin's. In Martinique and Guadeloupe, Dr Brassac of Basseterre, Guadeloupe, *estimates* about 150 cases in each island,⁴ or *about* 1 in 860 of the population, or (if the estimate be correct) less than half of the relative number of St Kitts.

In North America the disease is almost unknown, except in one isolated spot, the Bay of Chaleurs, New Brunswick, and chiefly among some poor French families; although it is to be remarked, that one Scotchman has been known to take it, and that his family were affected after him, and some few English settlers have also been attacked.⁵ It is uncertain how it was first carried to New Brunswick. Had it spread only among the French colonists, it might have been considered only hereditary, but its passing to other uncontaminated families proves that it is communicable, while its descent from one who got it by contagion may have either been from heredity or from the constant contact of his family with him. The question as to the spread in such cases being caused by the disease being *endemic*, I will consider further on.

It has been stated to me that cases occur in the Southern States of America, and such cases are seen among the blacks at Baltimore, but whether of blacks from the West Indies or natives of the States, I have no information.

In Central America, leprosy is known in Mexico,⁶ where it was certainly brought by the negro races, but where the present miserable poverty-stricken state of the population⁷ makes them ready for its attacks. It is unknown in Nicaragua, and apparently also on the Mosquito coast.⁸

¹ Milroy's Rep., p. 2.

² Bakewell, in Rep. on Vacc. Act, p. 208, says the Governor of Grenada told him there were only five or six lepers in the island.

³ Cozenave and Schedel, p. 355.

⁴ Private letter. He states that there are 50 or 60 lepers at la Desirade, where the lepers from Martinique and Guadeloupe are sent, but that many remain at home concealed (*cachés*). There is not now any law for their compulsory segregation, though there was formerly.

⁵ Coll. Phys. Rep., pp. 1-3, and 29.

⁶ Simpson quoting Cheyne, *lib. cit.*, 1842, p. 410, and Hirsch, p. 320.

⁷ Canon Kingsley (*Good Words*, 1873, p. 559) on "Spring in Mexico." He says, there are "magnificent churches all over the country, surrounded by two or three dozen huts, more fit for pigs than human beings, leaving the Indians around sunk one step lower in poverty, superstition, and ignorance"

⁸ Hirsch, p. 320.

In South America, it is known in Guiana¹ (where many authors agree that it was carried by the negroes), in the Brazils, New Grenada, Parana, Uruguay,² and Venezuela,³ these being the very states into which negroes have been imported most directly from Africa.

Now, had the disease remained known only among the African race, the fact of its being prevalent in the New World would have been no argument in favour of its communicability; but the very contrary is the case, *for wherever the indigenous tribes have come into constant contact with the blacks or Portuguese they have become infected.* The case of the North American Indians is no exception to this rule, for they have never been affected by leprosy, but they have always kept aloof from and despised the blacks, while the whites they have come in contact with have been chiefly English and Germans—races unaffected by leprosy at the time of their first contact with the red man. And, besides, they were a nomadic, and, consequently, flesh-eating people—another reason for their immunity.⁴ But among tribes in contact with infected races the case is different. In regard to the indigenous tribes of Surinam, Schillingius expressly states,⁵—“*Nam licet hodie aborigines eo (i.e., morbus) passem laborent, sinit tamen integræ gentes ab eo prorsus immunes, atque in illis etiam tribubus quas jam attigit eos tantum affectos esse deprehendimus qui cum Ethiopibus corpora sua miscent, aliarumve rerum commerciis junguntur,*” showing, especially by the part I have italicised, that, although some tribes remained free, those tribes brought most in contact with the blacks were most infected. Bates, again, in speaking of the disease at Santarem, says that all races were affected alike, white, Indian, and negro.⁶ The same may be said of Mexico. Brassac also speaks of several *Indians*, natives of Venezuela and Trinidad, who were lepers.⁷ I am aware that Milroy⁸ notices that the Indian tribes in Essequibo (Guiana) are exempt from the disease, and their freedom from it is attributed to their not eating salt fish, and to their dwellings being cleanly and well ventilated; but as these Indians seldom or never mix with the negroes, and the country was originally settled by the Dutch, the immunity is much more likely to have been the result of absence of communication with the blacks, while the Dutch were, as a nation, nearly free of leprosy before Guiana was colonized,⁹ unlike the Portuguese, who still remain affected. The North American

¹ Hirsch, p. 321.

² *Ibid.*, p. 326.

³ Brassac, Report Addressé au Directeur de l'Intérieur (on Beaupathuy's treatment), Gaudeloupe, 1869.

⁴ It is possible that to the fact that no nomads *can* be solely vegetable-feeders that their immunity from leprosy can be traced.

⁵ Dissertation xx.

⁶ *Lib cit.*, vol. ii. p. 15.

⁷ Rep., p. 28, etc., also quoted by Bakewell.

⁸ Rep., p. 9.

⁹ Guiana was colonized in 1580, and the Netherlands were quite free of leprosy in the middle of the next century, so that the cases must have been at that time (1580) few and far between—while it is to be remembered that it was only hardy men who would go as colonists to such a place.

Indians are a filthy race,¹ yet they are not affected, so that simple dirt cannot produce the disease; so that no arguments can properly be founded on such instances as those mentioned by Dr Milroy.

I may here notice, as another strong proof of the communicability of leprosy, its spread to whites who have either themselves come from uninfected parts of Europe, or are the descendants of such,² and who consequently can have no hereditary taint, yet may become affected after a more or less prolonged residence in the West Indies or other places where leprosy is common. The value of such proof has been questioned, on the ground that such cases are only examples of certain endemic influences causing the disease, or of the disease occurring in those with a personal predisposition.³ But such a supposition only adds one difficulty to another, for if there is such a personal predisposition why does it never show itself except in persons living in countries infected by leprosy? As to the contagiousness of the disease being explained away on the idea that leprosy is endemic, and that cases arising in Europeans in the West Indies and such places are caused by endemicity simply, I would simply ask those advancing such a theory, how it is that in the West Indies, and all over the Western Hemisphere, and all over the Pacific Ocean, with the exception of New Zealand, a possible exception which only proves the rule, no such endemicity has existed until an infected race was brought into contact with, or took the place of, the original inhabitants. It may doubtless be said that the habits of the inhabitants have changed, and that these changes have tended to make the disease endemic; but this is so far from being proved, as I will hereafter show, that every one of the causes, such as filth, want of ventilation of houses, and the like, which have been put forward as their cause, are, on careful consideration and a broad view of the subject, quite inadequate to the *production* of leprosy, whatever may be their power in assisting in its propagation when it once has taken hold of a population; such supposed causes having, in fact, existed among many populations where leprosy has or still remains unknown, so long as no infection has been introduced among them.

One remarkable instance in which leprosy was acquired without the possibility of any endemic influences acting, is that quoted by Hutchinson, referred to by me above, of a Scotch sailor who became a leper after trading for about thirty years to Barbadoes, where he only spent about six weeks each time, and lived in his ship almost the whole time.⁴ Now leprosy is essentially *slow*, and

¹ Paul Kane, in *Household Words*, 26th March 1859.

² I have seen such cases myself among *poor* whites in St Kitts. Many are also referred to among works on the subject, as in Hebra, vol. iv. p. 184; Milroy, Rep., pp. 3-10; Coll. Phys. Rep., xxxviii, pp. 3, 20, 85, 198, etc.; Virchow, *lib. cit.*, p. 507; Macnamara, p. 56; Bakewell, Rep., p. 61; and Hutchinson in New Sydenham Soc. Catalogue to Atlas of Skin Diseases, p. 96.

³ Carter, Rep., pp. 24 and 26.

⁴ Within my own knowledge, it is very rare for sailors to spend a night on shore, and I have known of them spending weeks in harbour at St Kitts without being ashore at all.

it cannot be imagined for one instant that this man's occasionally (twice or three times at most each voyage, or perhaps six separate times a year) spending a night on shore could have caused the disease to arise through the slowly-acting endemic influences which have been put forward as causing it. I have already shown how absurd it is to argue that because in such cases no history of contact with a diseased person can be obtained, owing to the long period of incubation, therefore it could not have been caused by contagion—the only cause I consider we can really look to to explain away all difficulties. In short, it is, in my opinion, an utter misuse of the word endemic to attach to it necessarily the idea of causation of disease, as certain diseases may exist now among a people, and so be strictly endemic, and yet have been imported, as I believe leprosy has been, to the New World, so that it cannot be looked on as an indigenous disease—which, after all, is what a disease capable of arising at any time, simply from the existing conditions of the soil, unless those conditions themselves are changed, must always be, as for instance malarious fevers. Leprosy is *not* an indigenous disease in the West Indies; no sufficient cause or causes for its origin there have ever been shown to exist; therefore, the proposition that certain cases may have been affected with it, simply because it was an “endemic” disease, amounts to nothing, and is of no value whatever. No doubt the conditions of life of the present inhabitants are different from those of the Caribs, the huts of the negroes being close and ill-ventilated, and they being anything but cleanly; but the houses of the Esquimaux, or the Yourts of the Koriaks, as described by Kennan, are far worse in that respect, while within the tropics the houses of the Mexicans and Peruvians, as described by Prescott, were equally “civilized,” in so far as they were close, not mere open huts like those of the Caribs, yet among neither of the peoples was leprosy known.

From the Western Continent we now pass to the Isles of the Pacific, in none of which, with the exception of new Zealand, and it is possible, Fiji,¹ was leprosy known up to the year 1848.² I make this assertion after a careful perusal of the

¹ *Ibid. ante*, Nov. 1876, p. 436, footnote.

² I make this assertion in the full knowledge that Bougainville called one of the Friendly Isles the Isle des Lepreux (Kerr's Collection, vol. xi. p. 503), that Cook speaks of a case of leprosy, or some *scrofulous disorder*, at Anamooka, one of the same group (Voyages, vol. iv. p. 19), and that Ellis (“Polynesian Researches,” vol. ii. p. 19) speaks of “a kind of leprosy” at Tahiti. The last, from his description, as I have already said, is evidently simply leucoderma, as “it turns the skin of the parts affected white.” Bougainville probably saw cases of scruffy skin caused by ava-drinking, which every voyager, from Cook to Boddam Witham, writing in 1876, has described as producing fishy eyes and scaly skins (p. 156); but as Bougainville never actually landed on the island, except for a very short time, and only saw some of the natives *while fighting with them*, his statement is of no value, even had it been likely or even almost possible that *real lepers could have fought*; besides, he was a colonel, not a medical man. As to Cook's case, it must be examined rather

accounts of the voyages of Magellan (1522), Schouten and Le Maire (1615), Dampier (1685), Clipperton (1705), Rogers

more in detail to show that it was *not* one of leprosy, but really a case of syphilis or scrofula. Firstly, Cook mentions that, "on his first visit, entering a hut, he saw a man with his nose eaten away," and describes the disease thus, as seen on his third voyage:—"It is very frequent, and appears on every part of the body in large broad ulcers with thick white edges, discharging a clear thin matter, some of which had a very virulent appearance, particularly those on the face, which were shocking to look at. And *yet we met with some who were cured of it, or in a fair way of being cured, but with loss of nose.*" "*Notwithstanding the similarity of symptoms, it cannot be the effect of the venereal contagion*" (vol. v. p. 403). Thus, in the parts I have italicised, Cook himself disproves his own idea, for, leprosy being very rarely a curable disease, the number of cured cases, or cases in process of cure, he met with, showed it was not leprosy; and as he only founds his assertion that it could not have been syphilis, on his belief that he was the first voyager who had reached these islands, and therefore his crew the only means of communicating it to them, it is quite clear, from the expression I have italicised in regard to the symptoms, that, had he known of such former communication, he would have thought it syphilis. But such communication had actually taken place, the very same spot having been the landing-place of Tasman in 1643, a date at which the great epidemic of syphilis, which began in Italy in the end of the fifteenth century, had not yet died out in Europe. Again, Bougainville actually visited Anamooka fully a year before Cook, and spent some days there. This seems not to have been known to Cook; and although Bougainville accuses the English of conveying syphilis to the Society and other South Pacific isles (Kerr's Collection, vol. xiii. p. 502), as he had his men examined before allowing intercourse between them and the natives; yet, as Cook himself says (vol. vi. p. 180), "however confident we may be of the health of our men, we are often undeceived too late,"—an observation the force of which can now be seen in the light of the newest investigations, which show that every secretion of the body may convey syphilis (see for instance Morgan, in *Br. Med. Jour.*, 14th March 1874; also see *Lancet*, 13th June 1868; Drysdale on Syphilis, p. 48); thus it is quite possible that Bougainville's crew carried it. Besides, Wallis, in 1767, more than a year before Cook, visited some of the same group, the Friendly Islands; and he remarks (Kerr's Collection, vol. xii. p. 222-23), that though there was no kind of metal in any of the islands, the natives knew that *iron* could be *sharpened*, showing that even previously to his time there had been communication with nations using iron, and consequently opportunities for the introduction of syphilis.

Even so early as 1522, Magellan, in speaking of Luzon, says that the lues venerea was common there "and in all the islands of this great archipelago." Mendana also passed through the Georgian Isles in 1567. Of course Magellan only refers to such islands as he had seen, but the fact of the disease then existing makes it more than probable that, considering the constant communication between those islands, of which there is an almost continuous chain, from those visited by Magellan and Mendana to the Friendly Isles, apart from the possibility that these islands had been infected before from China, where syphilis is stated to have existed centuries before Christ (Dabery, *La Médecine Chez les Chinois*, p. 229, *et seq.*), syphilis had spread to the Friendly Isles before 1768. Thus there had been abundant opportunity for the introduction of syphilis into the Friendly Isles even from *recorded* voyages; but as Cook himself mentions that syphilis was introduced into Queen Charlotte Sound (vol. v. p. 194) by an unknown ship, and as Carteret speaks in the same manner as Wallis of finding natives of the Carteret's Isles acquainted with the use of firearms, though he was the first *recorded* visitor (1765), there might have been many opportunities, besides those known to the world, for the introduction of the disease.

Thus, Cook's conclusion that the disease he saw was *not* syphilis, simply

and Courtenay (1708), Roggewein (1722), Carteret and Byron (1764), Wallis (1766), Bougainville (1766), Cook (1768), etc., and the accounts of different islands given by Mariner (Tonga or Friendly Islands), Herman Melville (Marquesas, 1842), "Dash (Six Years among Savages in the Marquesas)", also, "Rovings in the Pacific, by a Merchant," and Ellis's "Polynesian Researches," being, in fact, all the works I could obtain giving me any information about those islands up to the date I have mentioned. In many of them notice is particularly taken of the good health of the natives, especially of those islands furthest from the Asiatic continent, and which had had least communication with strangers. Thus, Wallis says that, at Otaheite, "we saw no appearance of disease" (Kerr, vol. xi. p. 216), and distinctly states that there was no *syphilis* there at the date of his visit. The same is said by Dash and Melville in regard to the Marquesans, among whom, according to the latter, "sickness is almost unknown," there being "on their smooth, clear skins no blemish or mark of disease" ("Residence in the Marquesas," p. 141).

I have also carefully noted in all these works all remarks made about disease of any kind, and have found elephantiasis, scabby eruptions, albinism, ulcers, and deformities of various kinds

because there had been no possibility of that disease being introduced, falls to the ground. That it *was* syphilis might be more difficult to decide. On this point, the evidence of Ellis ("Polynesian Researches," vol. ii. p. 14) is of value, as it is in regard to the effects of syphilis in the same race, though in another group of islands. He says of the South Sea Islanders, "There are many cases of deformity arising from a disease of foreign origin affecting the features of the face and muscular parts of the body." This was written after ten years' residence in the Society Isles from 1816, and reminds us at once of the disease described by Cook, in which the *nose* was eaten away.

On the other hand, Thomson, in describing the diseases of New Zealand, and among them Ngerengere, the leprosy of that country, expressly states that he *never saw a native without a nose* (*Med. Chirurg. Rev.*, Ap. 1864). As to the possibility of its being scrofula, as Cook admits, however, the following description of a disease called "palla and celi," in which the generative organs are never affected, to which the natives of the Friendly Islands were very subject about 1810, is very much to the point. The people are very subject to scrofulous indurations, glandular enlargements, and *ulcers*, chiefly in groin, axilla, and neck, "sometimes to such an extent that some travellers have mistaken them for lues venerea (it is possible Magellan did so); and it is certain that some individuals with palla have been obliged to *submit* to the loss of the nose, the cartilaginous and softer parts of that organ becoming completely destroyed." (See Martin Mariner's "Account of the Natives of the Tonga (Friendly) Islands," London, 1817, p. 267.) He was among them several years. He maintains that "palla" gets well spontaneously, thus agreeing with Cook's description of the "leprosy or scrofula" he saw at one of the same islands. Thus, I have no doubt that the disease was *not* leprosy, but probably scrofula, and possibly syphilis or the latter acting on scrofulous subjects.

In conclusion, I may remark that Cook's ideas of leprosy were evidently confused, as he mistook dried salt on the skin, caused by constant immersion in salt water, for leprosy. This was among the New Zealanders (vol. ii. p. 46); and he also speaks of the Otaheitans having "cutaneous eruptions of the scaly kind, very nearly approaching to leprosy." Thus, he evidently looked on psoriasis as a kind of leprosy.

mentioned, but nothing except those few instances I have noted indicating anything like the existence of true leprosy in any of the Polynesian Islands.

At the present time, however, leprosy has reached the Sandwich Islands. The history of its introduction is as well told as it possibly can be by Dr Hillebrand, for it must be kept in mind that such an inquiry has to be made *years after the first contagion is introduced into a country*; such being of necessity the case, from the slow action of the disease; and, besides, it is among an uneducated people, little inclined to make observations in regard to such matters. He says: "In the Sandwich Islands leprosy was unknown before 1859, and, after close scrutiny, cannot be traced farther back than the year 1852, or, at the most, 1848." From a Government census, there were, about 1865, 230 lepers among 67,000 natives, or $3\frac{1}{2}$ per 1000; but Dr Hillebrand thinks that anæsthetic cases were generally omitted from this, and calculates the real ratio as 4 per 1000. He first recognised the disease in 1859, but remembered cases as far back as 1853, and says, "Further inquiry among the natives at length brought to light that a few had been observed in 1852 and 1851; and an old chief, well versed in everything pertaining to his countrymen, referred the first case known to him to the year 1848." In 1859, when he first drew the attention of the Government to its existence, only a few cases became known, but in 1864 and 1865 it was common. "Soon after the character of the disease became known, the natives began to call it 'Mai pake,' the Chinese disease." He "was not able to ascertain whether this was from a belief that the disease had been imported through Chinamen, of whom there have been a considerable number settled at the island for years," or simply because the Chinamen had told them that the disease was common in China.

Thus, leprosy has been introduced and spread without the possibility of hereditary taint. Dr Hillebrand only saw one child under six years of age, and only one case of father and child. Yet he points out that the state of the people has in every way improved

¹ Letter to Dr Ch. Macnamara, appended to his paper on Leprosy, p. 53, dated at Calcutta 3d Feb. 1855. Dr Boeck (in Carter's Rep. on Lep. in Norway, p. 45) says that "a whole series of observations would be required to establish a scientific proof that the disease was imported by the Chinese in 1848; and, from observations in Norway, considers Dr Hillebrand's report a total misunderstanding. But in this Dr Boeck demands what, from the very nature of the circumstances, we can never really expect to obtain, and it is surely more unscientific to reject such evidence, because it does not come up to some impossible-to-be-reached standard, than to accept it for what it is worth, when carefully compared with that obtainable from other countries. I must confess also that I think Dr Boeck's assertion very vague, and that I cannot understand how observations made in Norway—a country in which leprosy has been known for centuries, and is now on the decline—could have any bearing on the question of the mode of origin of the disease in the Sandwich Islands, where it has begun so lately, and is rapidly on the increase.

Dr Boeck seems also to be in error as to a matter of fact, when he says that the disease spreads among particular families, as in Norway. Dr Hillebrand points out that the very opposite is the case.

from their former state: food of all kinds is abundant, "but I would like to remark here," he says, "their food is the same as it used to be, a part formed of the tubes of the *Colocasia esculenta*, richer in gluten than any other." This is, as it was when Cook discovered them, still their *chief* diet, and is eaten when partly putrid.¹ Although animal food may now be, as Dr Hillebrand says, within the reach of every one, a national taste is not easy to change, and the Sandwich Islander will still prefer his dish of pooce or poi, as the paste was called, to animal food, which for ages has been tabooed to him, for, when they were discovered, the use of such food was almost entirely confined to the chiefs.

As regards their houses, Dr Hillebrand says, "Their former dark and damp straw huts are rapidly making room for pretty wooden structures, raised from the ground, and *well aired*." He mentions that their constitutions have been sapped by syphilis. Many of those affected are well off.

As to its diffusion, he first saw it in 1853, about twenty miles from Honolulu; in 1861 this case was far advanced, and six persons *in his immediate neighbourhood* had been taken ill with it. "The natives are of a very sociable disposition, *much given to visiting one another*, and hospitality is considered a sacred duty by them." The greatest number of cases are at Honolulu, the capital, while "at the time the census was taken, one or two of the remotest districts of Hawaii, *which have but little intercourse with the rest of the group*, were yet exempt from the disease. When asked, about one-fourth avow contact with other lepers as the cause—a proportion which may be considered high, considering the shortness of time that the disease has been known, and the long period of incubation, during which the poison must lie dormant in the body before it manifests itself." "In one family, I hear, a brother, sister, and all individuals between fourteen and thirty-five years, hereditary taint is out of the question." Dr Hillebrand's observations refer to tubercular leprosy. In almost all the cases there was anæsthesia, and generally squamous eruption.

I have referred at some length to Dr Hillebrand's most interesting letter, which, in my opinion, gives as complete an account as can possibly, from the nature of the circumstances, be expected, of the introduction of leprosy among a previously healthy people *some time after* they had first come in contact with the Chinese, an infected people—exactly what had taken place in other countries of which I have already spoken—although in them we have not so clear an idea, as a rule (except in Gaudeloupe), as to the exact date within a decade of its introduction. I hold that it matters not that it is now utterly impossible, and was so at the time Dr Hillebrand began his inquiry, to trace the exact source of contagion, the exact individual Chinaman from whom the first native

¹ Boddam Witham, "Pearls of the Pacific," 1876, p. 33. The same remark is made by many other travellers in regard to the Marquesas and other islands. He mentions that pork is still reserved for the chiefs in Fiji (p. 345).

was infected, seeing that the time of contact must have been many years previously; but the broad fact remains, agreeing with similar facts elsewhere, and until some other reasonable hypothesis can be advanced, and I candidly confess I can think of none, I consider that we are forced to the conclusion that the disease, being carried by human intercourse between two distinct races, was conveyed by contagion. This conclusion is supported by the words quoted which I have italicised; the second six cases (noted in 1861) seen, were all in the *immediate neighbourhood* of the first case seen in 1853; and he remarks that other instances of the same kind came under his notice. Again, we have the fact that those places with little intercourse with other parts (like the centre of Russia) remain longest or totally free from the disease.

The spread of the disease has been like that of all epidemics at their commencement—fearfully rapid—and reminds us of its behaviour in Europe after the Crusades, when everything was in its favour. There were last year no less than 700 lepers in the Leper Settlement which has been established by Government 20 miles from Honolulu,¹ so that, even supposing that to be the whole of the lepers in the group, which is most unlikely, there is (even if the population is the same, 67,000, as formerly, which is hardly likely, as the tendency throughout Polynesia has been to a decrease of population through the ravages of syphilis and other causes), no less than 1 leper in 97, or the greatest relative number in any population in the world—far surpassing even the West Indies.

Again, I would call attention to a remark of Dr Hillebrand's I have italicised, as to the natives being sociable, *and much given to visiting*. Here we have, I have no doubt, at least one explanation of the rapid spread of leprosy, and another argument in favour of its being contagious.

Having already said what I think about the so-called leprosy of Fiji, so far as we can at present speak of it,² we will now pass on to consider that of New Zealand.

¹ Boddam Witham, *lib cit.*, p. 63.

² I do not *deny* that Dr Seeman's case, or rather Mr Moore's, for Dr Seeman only reports it at second hand, was one of leprosy. I only consider our evidence on the matter defective. It is much against the idea of its being leprosy that Dr Forbes ("Two Years in Fiji, 1875") makes no mention of the disease, though he mentions several diseases, as dysentery, the effects of "kava" drinking, etc. (pp. 170 to 194). I have written to Fiji.

Note.—While the foregoing sheets were in the press, I have read for the first time Landré's excellent work ("De la contagion seule cause de la propagation de la Lèpre," Paris, 1869). He gives (p. 20) a case of an *Indian* who contracted leprosy after constantly frequenting the leper-house, showing an instance of what I have referred to at p. 808. His work as a whole shows what I myself have tried to demonstrate—that the proof of the contagion of leprosy is more to be sought for in its history than in mere cases.

(To be continued.)

ARTICLE VIII.—*Mercury in Syphilis.* By JOHN DUNCAN, M.A., M.D., F.R.C.S., Assistant-Surgeon, Royal Infirmary.

THERE appears to be a tendency at present to fall into a routine administration of mercury in cases of syphilis. Incidental remarks in papers upon syphilitic subjects strongly mark this general disposition, and all systematic syphilographers recommend more or less prolonged courses of mercury. Mr Van Buren asserts that it ought to be administered continuously for two years in every case of syphilis, and Mr Hutchison sighs for the time when our diagnosis shall be so perfected that we may begin it on the first appearance of a primary sore. I suppose that no one now retains the belief which formerly led to disastrous results, that to drive the disease out of the system you have only to give mercury with sufficient boldness and energy. But there still lurks an impression that you may coax it out either by an early attack or by a judicious perseverance in the remedy. Many probably act without much thought on this simple faith, derived partly from authority, partly from observation. But I fancy that most men frame for themselves some hypothesis as to the more intimate relations of the medicine and the malady, and, as is natural and right, are guided thereby in their practice. It is therefore of importance first, that the most probable hypothesis should be chosen as the therapeutic guide, but, secondly, that it should be regarded purely as such. For it must be borne in mind that the number of these hypotheses is considerable, that this variety of opinion—perhaps also its dogmatism—indicates a want of certainty in the fundamental facts, and that it is of the utmost moment that we should be able to distinguish between what is hypothesis and what is fact, between our beliefs and the foundations on which they rest.

On the very threshold of any inquiry into the value of mercurial treatment we are met by difficulties which arise from the character of the disease. The natural history of syphilis is uncertain. It is certain only that it is irregular and prolonged. Perhaps it is not very far from the truth to assert an average duration of two years. But although this may be so, and most syphilitic patients after that time cease to show symptoms of the disease, the exceptions are numerous. Some have no relapse after the first rash or sore throat has disappeared, while in an unascertained proportion others have the disease prolonged from the secondary into the tertiary stage, either directly, or after indefinite and sometimes exceedingly long periods of immunity.

The difficulty is evidently great of determining the curative power of a remedy in a malady such as this. The effectual observation of a case means the lifetime of the patient. Fournier relates the story of an old gentleman of 70 who manifested tertiary symptoms after 50 years of health. Had he died in his 69th year he might have been reckoned among the cures of the system accord-

ing to which he was treated. Individual cases therefore are of no value. It is plainly impossible to say of this or that patient, however carefully he may have been watched, that immunity was due to treatment. It is a question of numbers and averages.

It would, of course, require no large collection of cases to prove that after a given amount of mercury has been administered the disease is invariably arrested. But I do not think that this has ever been seriously maintained, because while invariability would make it easy of proof if true, variability renders it in fact easy of refutation. Apparent cures, we know, occur whether the patient have been syphilitised, mercurialised, or left alone, but we know also that relapses are common enough whatever system be pursued.

The first point then to be determined is, whether or not mercury shortens on the whole the duration of syphilis,—are tertiary symptoms less frequent and severe after its exhibition than if it be withheld? As has been said, a decision is obtainable only from a large statistic made under very difficult conditions. It is first necessary to ascertain the percentage of syphilitic patients who suffer from tertiary lesions. That alone is hard to discover, for in the long course of the disease the patient passes from one surgeon to another, the evidence of immunity becomes unreliable, and the treatment varies. But in addition another collection of cases must show the duration of the disease in those who have taken mercury; and in both instances the numbers must be so large as to eliminate the possibility of a run of luck on one side or the other. In short, it appears to me that the necessary evidence is so entirely wanting that we must regard it as undecided whether or not mercury shortens syphilis.

But it is conceivable that, although mercury may not prevent or diminish the frequency of tertiary symptoms, it may yet shorten the period of secondary symptoms. I believe, however, that this also is a point on which no definite decision can be given. Such a conclusion ought also to depend upon averages. But in reality, in so far as it is held it depends solely on the impression produced on the individual practitioner, partly by authority and partly, doubtless, by experience. I have no doubt that were the profession polled, an answer in the affirmative, more or less strongly expressed, would be given by a large majority. But the value of general impressions in a case of this sort is not great. They are of the same weight as the formerly prevalent opinions that mercury should be given to profuse salivation, or that it is utterly valueless and injurious. My own notion is that mercury does not shorten the secondary stage. But it is merely an opinion. I have notes of only eight cases in which it may be said that the secondary symptoms have definitely ceased, and in which I feel assured, from having watched the cases throughout several years, that no mercury has been administered. The average duration of these cases was not quite six months, which certainly contrasts favourably with the usual course of syphilis. But I attach little importance to the observation, not

only because the numbers are so small, but also because the mildness of the symptoms determined the withholding of the remedy. But taking it for what it is worth, and recalling the more extended investigations of others, I think we are warranted in coming to the conclusion that there is, to say the least, no proof that mercury abbreviates the secondary period.

So far the argument has been negative. It has not been proved, neither has it been disproved, that the exhibition of mercury shortens the duration of syphilis.

But if this be so, how has it so long held its ground as a remedy for the disease? The answer lies in the fact, that it causes the disappearance of syphilitic manifestations. I do not forget that this has been denied by some, who advocate the strange doctrine, that the beneficial action is manifested only in those who have been already mercurialised. But the point is one which admits of more easy demonstration than those which have hitherto been discussed. As the observation of one particular outbreak in a case of syphilis lies easily within the range of the individual practitioner, consensus of opinion becomes undoubtedly of importance. This consensus is almost universal. Moreover, the circumstances are such that a succession of test cases could easily be produced in which the possibility of mere coincidence is reduced to a minimum; in which it is impossible otherwise to explain the differing results in parallel cases treated with and without mercury, the rapid sequence of administration and cure, and the effect of alternately giving and withholding the remedy. I need not cite examples. Doubtless every one has now and again made these experiments for himself.

It cannot, of course, be contended that good results are invariable. No treatment is infallible, and while some cases readily yield to mercury, others are extremely obstinate. It becomes therefore an important subject for investigation, and one not yet sufficiently worked out, to discover which manifestations are amenable to the drug and which resist its action.

The most popular idea is that mercury is applicable to the secondary, iodide of potassium to the tertiary stage of the disease. This conception appears to be founded partly on fact, partly, as is often the case with our therapeutic notions, on a theory as to the nature of the disease. We have in the iodide a remedy which, in the later manifestations, is at least as potent as mercury, and probably less harmful. So far the preference is justified by the fact. But people have thence jumped to the conclusion, that mercury is of little value under these circumstances, and I believe that they have been influenced thereto by the idea long prevalent, and lately most explicitly defended, that tertiary lesions are to be regarded as sequelæ rather than direct products of the syphilitic virus. I do not myself think that this thesis can be successfully maintained. I rather incline to the belief that prolonged syphilis resembles acquired gout and other diseases in ultimately becoming a depraved habit of nutrition, in which, however, the original

blood-poison is more or less altered by time, treatment, and other conditions. But, be this as it may, at least we are not justified in founding a therapeutic faith on such a hypothesis. We must be guided by results. Now the success of the iodide is so great in tertiary lesions which have not yet led to complete disorganization of the organ attacked, that we have comparatively few opportunities of putting mercury to the test of actual experience. We are justified, however, by experience in considering it an instrument of no mean power. It is, for example, more potent than iodide of potassium in those affections of the skin which appear to be prolongations and aggravations of similar secondary outbreaks. Moreover, although we cannot lay down any hard and fast rule with regard to gummata and the more deeply-seated lesions, it would seem that when the iodide fails, mercury ought to be administered. Sometimes one succeeds when the other does not. And there is even a certain class to which a combination is more suited than is either alone. A woman, *æt.* 38, was admitted to the Lock Hospital in the tenth year of her disease. Her legs were covered with nodes and scars and extensive ulcers, her liver was the seat of gummata, and there was much albumen in the urine. She was many weeks under treatment, but ultimately went out greatly better. The legs were healed, the liver was normal in size; there was merely a trace of albumen, and she had regained flesh and strength. Many experiments were tried, and it was repeatedly noted that progress was slower under every treatment other than the combination of mercury with iodide of potassium. Such cases are not very uncommon, and I think it may be fairly said that most examples of tertiary syphilis recover under iodide of potassium, and that of the failures a certain number may be cured by mercury, and some by the exhibition of both drugs at once.

As a general rule, then, iodide of potassium is to be regarded as the chief remedy in the tertiary stage. In the secondary stage, on the other hand, mercury is our main resource, and neither iodine nor any other drug can be regarded in the light of a specific. We may do much by diet and hygiene, and tonics and local treatment, but if we fail to benefit our patient by mercury, it is on these alone, and on the general principle of attaining the greatest possible degree of health, that we must fall back. It is important, therefore, to determine as nearly as we can in what forms of secondary disease this failure is likely to occur, in which success may be expected. Mercury is not, if possible, to be given haphazard. It will do harm where it does no good.

In the production of syphilitic manifestations we have to distinguish three factors: the character of the poison, the subject of the disease, and the external conditions. The analogy of the seed, the soil, and the climate, has a certain bearing. That the character of the poison probably varies may be inferred from the modifications which the disease has undergone at different epochs and in different coun-

tries, as well as from the stages of its regular evolution. It seems certain that the constitutional tendencies of the subject of the disease modify the manifestations. In the gouty, the eruptions of syphilis assume forms of adhesive and desquamative inflammation; in the strumous, they tend to be suppurative and ulcerative. More minute relationships may often be made out. The instability of special organs may determine syphilis to localize itself in them. I have seen only two cases of secondary icterus, both coincident with the papulo-squamous eruptions. They occurred in persons habitually and greatly intemperate. This determination to unstable organs can also sometimes be traced even in tertiary lesions. A gentleman, æt. 54, whom I had already treated for other tertiary affections, suffered from syphilitic aphasia with right hemiplegia for nearly a year, but ultimately recovered. One brother is deaf, intemperate, and peculiar, another had to give up business on account of melancholia. Indeed, nervous instability of a hereditary or personal character may be discovered if searched for in many cases of cerebral syphilis, and the same is the case with other organs.

But yet again, external conditions or accidental circumstances not inherent in the poison or the constitution may modify the outbreaks of the disease. More striking examples of this could hardly be given than the following:—A patient in the Lock Hospital, who had a history of exanthematic syphilide, and was under treatment for sore-throat and condylomata, was assiduously poulticed on account of pleurodynia. On the third day a copious eruption of flat papules made its appearance over the area occupied by the poultice, and a few days later a scanty eruption of the same character, but with smaller and less prominent papules, came out on the chest and abdomen. Another interesting instance of the same etiology was that of a patient also in the Lock Hospital, who was suckling a syphilitic child when admitted. The right breast was small and showed many scars from a former suppuration; the left, from which alone the child sucked, was large and full of milk. This left breast was covered by a copious eruption of peculiarly large papules, many of them the size of a shilling, certainly twice as large as, and three or four times more numerous than, those on the right breast and on the rest of the body.

But these are merely self-evident examples of what I take it has a much wider application. Local irritation plays a most important part in determining the character, the position, the duration, and even the occurrence of syphilitic eruptions.

Each portion of the body has a tendency to produce when attacked by syphilis an eruption of special elemental form. This depends partly on the anatomical character of the tissue, but largely also on the amount and kind of irritation to which it is prone from its relations and position. The secondary eruption of syphilis is typically a papule tending to become squamous. But this is modified by locality, and becomes, for example, a mucous

patch in the cavity of the mouth, a condyloma on the external genitals. The constant moisture gives the papule, as it appears in the mouth, its white film; the warmth and moisture, and irritating secretions of the affected part render the papule a condyloma, and cover it with its moist pultaceous layer. I would even say, that the prolonged duration of these special varieties, and the frequency with which we find them the sole manifestations of syphilis, are proofs of their dependence upon local conditions. It would seem that the poison is often not sufficiently strong to show itself except under peculiarly favourable influences. And this explanation might be extended yet farther to the obstinate syphilitic fissures of the rectum or of the angle of the mouth, to the tedious forms of laryngitis, to the affections of the fauces, and their anterior pillar, to many other symptoms of the disease in which hyperæmia is apt to be maintained by irritating discharges, by frequent movement, or by moist warmth.

Enough has been said, however, for our present purpose, that of elucidating the therapeutic actions of mercury. If it be admitted that these observations are real and practical, it is evident that certain conclusions may be drawn from them as to the administration of mercury. Whatever hypothesis we frame for ourselves of the action of the drug, it is sufficiently plain that it will not produce, or only by an accidental coincidence can produce, a beneficial effect on the constitutional states which favour or modify syphilis; and it is at least equally plain that it cannot control local or external causes of irritation. It is only in so far as it comes in contact with the poison that it can exercise its curative effect. There are many ways in which it may be supposed to exercise this influence. It may do so by direct destruction of the poison through neutralization or elimination. It may be that it only restrains the fructification, hinders the zymotic process; or it may have its relation with the resultant of the action of the syphilitic poison on the tissue. When we consider that mercury does not prevent relapses, even after palpably causing the disappearance of an outbreak—nay, that relapses occur during the progress of a mercurial course, we can hardly avoid the conclusion that the first hypothesis is the least probable of any. Nevertheless, it is from its relation to the poison, and not from its effect on constitutional states or external circumstances that mercury can alone prove useful; and the more these factors enter into the production of the lesions of syphilis, the less benefit should we expect from its administration.

In practice we find that it is so. If we look to the cases in which the constitution of the patient plays a part, we should deduce from our general considerations that a treatment directed on the one hand against the poison, and on the other to improving the state of the system, would best fulfil the indications. And practically we find that while mercury alone is often tedious and uncertain, sometimes even deleterious, purely gouty or strumous

remedies are also very ineffectual. A combination of the two is required, and gives brilliant results. Something of this was recognised when it used to be laid down as a rule that mercury should not be administered in pustular, ulcerative, and phagadenic forms of syphilis, and that it ought to be avoided in anæmic and kindred conditions. The rule doubtless had its foundation in fact. In many of these cases quinine and iron, and cod-liver oil, are essential; but all of them, even anæmia, may require specific treatment; and I believe that success will depend on the accuracy with which we can gauge the predominance of one or other of these causes.

Yet, again, we should expect, and the expectation is borne out by clinical experience, that those phases of syphilis which are influenced by local circumstances would be under the control of mercury, less or more, according to their dependence on these circumstances. When condylomata and sore-throat are part of a general outbreak of the disease, they improve under the use of the drug. But it may often be observed that the improvement advances only so far, and that after the disappearance of the general eruption its concomitants either remain stationary or retrograde, unless local measures be also adopted. Where again they are the sole symptoms of syphilis, I have no hesitation in attempting their cure by purely local measures. I do not mean that mercury is then without effect, but that absolute cleanliness and rest, the use of drying and astringent and antiseptic powders, the topical application of mercury or other stimulants, such measures, in short, as may be indicated by the state of the part, are usually amply sufficient without the exhibition of any internal remedy.

There is yet another aspect of our subject which cannot be left out of view. It is well known that many have held the opinion that the use of mercury is extremely injurious to syphilitic patients, and the names mercurial node, ulcer, and so on, were invented to express the nature of the injury. This extreme view needs little refutation. I have already expressed my belief that we have no proof that mercury ameliorates the tertiary stage of the disease. We have certainly as little to show that it produces it. It is capable of absolute proof that tertiary cases of great severity occur both when mercury has been administered and when it has not.

But, at the same time, there is good reason to believe that under certain circumstances mercury may injuriously affect the tertiary stage. Reasoning from analogy, we should expect that if it be pushed to the production of its more severe and prolonged physiological effects, the result would be as injurious as that of any other cause of anæmia or depressed health; and so far also clinical observation supports *a priori* expectation. I feel assured, however, that our present knowledge does not warrant us in predicating a greater or less frequency of tertiary syphilis on account of the giving or withholding mercury as it is nowadays generally administered.

But there are indications that mercury may act injuriously even though given with caution during the secondary stage. I incline to think, that, if it do not speedily produce a cure, it tends to prolong a secondary syphilide; that, paradoxical though it may seem, mercury continuously administered may sometimes at once excite relapses and make them less severe. It is not uncommon to follow such a case as this. A patient with an ordinary syphilitic eruption and sore-throat has mercury administered with striking effect. But beyond a certain point improvement does not go. The eruption is still to be detected, the throat remains a little swollen, and while treatment is continued they presently get worse again. The relapse is slight. It does not last. But it recurs again and again, the patient loses health and strength, and the disease only comes to an end when the patient leaves off the drug and takes tonics and change of air. For such results, and they are not uncommon, mercury seems responsible. Probably had it not been pushed so far, the relapses would have been less frequent, although had it not been given, what outbreaks did arise would have been more severe.

There are also indications that mercury is more likely to prove injurious in some forms of the disease than in others. Probably its behaviour varies with each. Let me merely mention one. The mucous patches of the mouth perhaps illustrate the natural obstinacy of the complaint, and its dependence on local irritation, better than any other lesion. They are to be found dependent on the use of tobacco. I have frequently remarked their coincidence with attacks of indigestion, and I have one patient who has had an outbreak annually in the spring for fourteen years. These troublesome spots are very prone to become tedious under the prolonged administration of mercury. I am inclined to think that this arises from the physiological action of the drug upon the mouth. It is certain, at least, that, if a period have elapsed during which mercury has not been given, its re-administration may have a most salutary effect. But it would be tedious to enter farther into detail. My object has been to indicate an eclecticism in mercurial administration, as opposed to routine use. I have expressed my opinion, that mercury does not shorten the duration of syphilis, or of either of its constitutional periods; that it does not prevent relapses; and, if its use be prolonged, may even hinder recovery, and increase their number; but that it mitigates and shortens the manifestations of the disease. The general conclusions which I am inclined to draw from these premises are—

1. That mercury should not be given in syphilis unless the symptoms be severe, tedious, disfiguring, or in an important organ.
2. That it ought to be discontinued if the syphilitic symptom do not speedily yield, or if the general health begin to suffer from its use.
3. That no case either of secondary or tertiary syphilis need be despaired of till mercury has been fairly tried.

Part Second.

REVIEWS.

Leçons sur les Affections de l'Appareil Lacrymal, comprenant la Glande Lacrymale et les Voies d'Excrétion des Larmes. Professées par F. PANAS, Chirurgien de l'Hôpital Lariboisière; Professeur Agrégé à la Faculté de Médecine de Paris; Chargé de Cours Complémentaire d'Ophthalmologie; rédigées et publiées par le Docteur EMILE CHAMOIN, Ancien Externe des Hôpitaux de Paris: revues par le Professeur. *Avec figures dans le texte.* In-8. Pp. 224. Paris: V. Adrien Delahaye et C^{ie}: 1877.

PROFESSOR PANAS has, in addition to his general surgical wards, an extensive ophthalmological service at the Hôpital Lariboisière; and he holds the appointment of Lecturer on Ophthalmology to the Faculty. In the latter capacity, he gives a certain number of lectures annually upon a particular branch of his subject, which lectures he afterwards publishes in a carefully revised form. The volume now before us contains the sixteen lectures which he delivered in 1875.

The work is divided into two parts. The first part consists of two lectures on the anatomy, physiology, and morbid affections of the lachrymal gland; and the second, of fourteen lectures on the anatomy, physiology, and morbid affections of the lachrymal canals.

The *physiology of the excretory lachrymal apparatus* is admirably discussed in the fourth lecture. After a critical examination of modern researches and opinions, the author thus states his own views regarding the manner of action of the tear-excreting apparatus:—

“1. The lachrymal liquid is conducted to the outer angle of the eye as far as the puncta lachrymalia by the action of two physical forces, viz., *weight* and *capillarity*, assisted by a vital force—the contraction of the orbicularis muscle.

“2. The lachrymal sac and lachrymo-nasal canal become filled with the liquid under the influence of capillarity, assisted by the contraction of the orbicularis.

“3. The tears flow towards the lachrymo-nasal canal in virtue of the combined action of two physical forces, one of which is very powerful, *evaporation*, promoted by the mechanical action of the air-current; the other, which is of small account, is *weight*. To these two physical forces it is necessary to add the action of a vital force, *the contraction of the little muscle of Horner*, the influence of which is, however, very limited.”

To the physiological summary now quoted the following practical paragraph is added :—

“For the efficient action of these forces it is essential that the narrow duct traversed by the tears be in a state of absolute integrity. A slight puffiness of its mucous lining, or an increase in its secretion of mucus, are sufficient to interfere with the physiological flow of the lachrymal liquid, and so cause lachrymation. These are important considerations, to which we shall have occasion to revert, when we study the lachrymal tumour and lachrymal fistula.”

Acute inflammation of the lachrymal sac [*Lacryocystite aiguë*] is the subject of the eighth lecture. It is stated to occur seldom as a primary affection.—“The causes by which the chronic inflammation becomes acute are—wounds, exposure to cold, badly-performed catheterism of the lachrymal canals, or allowing a probe or dilator to remain in them. Acute phlegmonous dacryocystitis may originate in the propagation of neighbouring inflammation—inflammation of the conjunctiva or of the nasal mucous membrane. As an exceptional occurrence, the affection abruptly declares itself in the previously healthy lachrymal excretory canals. This mode of invasion occurs in the course of some eruptive fevers, particularly in the course of scarlatina according to Critchett.”

After discussing the symptomatology, diagnosis, and prognosis, the author thus lays down treatment of the affection :—

“At the very beginning of the attack there is indicated the abortive treatment by frequently-renewed cold compresses, or by the application of a small bag of pounded ice. A little later, anti-phlogistic applications, such as poultices of potato-starch or lint-seed-flour, and hot fomentations possessing emollient and narcotic properties, are useful by relieving pain and by preventing the inflammation from passing into suppuration. For the same purpose, and with a view to combat the general inflammatory symptoms, an emetic and mild purgatives may be administered, rest and a light diet being at the same time prescribed. If, in spite of these measures, the puffiness and redness increase—there being reason to fear that the sac has already supplicated—the surgeon must evacuate the pus by incising the sac through the skin. The earlier the incision the less likelihood will there be of detachment of the integuments, and the ulterior formation of a fistula. Here, as in the case of all purulent collections, the best antiphlogistic is the early opening of the abscess. It must not be forgotten that the inflamed suppurating sac is really a closed cavity, for generally the pus cannot escape either by the puncta lachrymalia or by the lachrymonasal canal. In such a case the best treatment consists in making an opening in front and at the most dependent part of the sac. To this proceeding the objection has been taken, that it leads to the formation of a conspicuous cicatrix; and to obviate that evil it has been proposed to substitute an internal opening by the puncta

lachrymalia and the lachrymal canals. In respect to this method, I would remark that an incision made at the uppermost part of the collection is very unfavourably situated for the flow of the pus. The cutaneous cicatrix resulting from the artificial opening of the sac is generally so little apparent, that I never hesitate to cut. Moreover, every day's clinical experience shows that deformed, depressed, and puckered cicatrices in the region of the sac are especially to be dreaded, when there has been delay in opening the phlegmonous tumour; whereas rapid cicatrization and an almost invisible cicatrix are obtained by making an incision early and at the most dependent part of the sac."

Chronic inflammation of the lachrymal sac is the subject of the eight remaining lectures. The author has never met with cases in which deep-seated lesions of the eye were the result of the lachrymal tumour, and he does not believe in their occurrence. In this matter, therefore, he differs from Mackenzie, Galezowski, and others.

The *treatment* is chiefly surgical; but, as the author shows, medical means must not be neglected. The general state of persons suffering from this affection demands attention.

Professor Panas describes *three different methods of surgically treating lachrymal tumour*, and gives at the same time a clinical view of the particular operation demanded by each degree and by each variety of the affection. He says in the twelfth lecture:—

"The *first method* comprises all the measures adopted for destroying the lachrymal apparatus. To this category belongs the pretended destructive cauterization lauded by the surgeons of very early times, and abandoned upon the discovery of the lachrymal canals. In the eighteenth century, in Italy, it was restored to its place of honour by the elder Nannori. In more recent times, the destructive method, which had again become neglected, found new defenders in Stœber, Reybard, Junken, the elder Desmarres, Magne, and several Italian surgeons.

"The *second method* comprises all the measures adopted with a view to restore normal functional powers to the lachrymal ducts. The founders of this method were Anel, J. L. Petit, and the entire French school of the eighteenth century, who have had as followers, Scarpa, Ware, Dupuytren, Gerdy, Bowman, Critchett, Weber, Stirling, and others. This method is at present generally employed.

"The *third method*, which is only applicable to certain special cases in which the lachrymal ducts have become permanently obliterated, consists in forming new ducts. The realization of that object has been attempted in different ways by Woolhouse, Laugier, Dupuytren, Feltz (of Lyons), and Reybard."

Passing over the pages devoted to the first method, we come to the thirteenth lecture, which begins with the following description of the second method:—

"The means recommended for establishing the physiological

permeability of the lachrymo-nasal canal fulfil in reality the indication for the rational treatment of lachrymal tumour and fistula. Since these means were first employed by Anel they have been infinitely varied. I shall pass them in review, beginning with the simplest."

We have only space to transfer the concluding portion of this interesting and instructive review to our pages.

"The internal incision is the method adopted by M. Trélat. He generally operates with Weber's knife, sometimes, however, employing the knife of Stilling. As a rule he makes only one incision, which he follows by daily catheterism, using Bowman's No.-6 sound. Giraud-Teulon is also in favour of this method.

"Having practised Stilling's stricturotomy in a great many cases, I have found that it possesses unquestionable advantages.

"1. As compared with Bowman's method, it shortens the duration of treatment in a remarkable manner.

"2. In cases of slight catarrh of the sac, I have frequently been able to cure my patients permanently in one sitting. The importance of such a result is great in the case of children, who require to be chloroformed every time that Bowman's method of catheterism is employed.

"3. In old-standing catarrh and in cases of suppuration of the sac, I always follow the section by catheterism. By this combination of proceedings, the duration of the treatment is considerably curtailed. It sometimes happens that after a first section, and notwithstanding continued catheterism, there is a tendency to reproduction of the stricture of the canal. When this occurs, I do not hesitate to repeat twice or thrice the operation of Stilling.

"4. I have never seen the slightest accident caused by this operation.

"Such are the numerous means which have been in succession proposed for the restitution of the lachrymal canal when more or less narrowed. The very multiplicity of these measures proves their imperfection, as I have already had occasion to remark. Undoubtedly, if there be a real fibrous or cicatricial stricture, the method of dilatation or of section will be applicable; but even in such cases, particularly when the mucous membrane is in a state of inflammatory tumefaction with a friable, bleeding, or fungous condition, it is absolutely necessary to endeavour to modify the vitality of the parts. For this purpose, different astringent and caustic injections may be used; or, better still, a stick of fused nitrate of silver may be applied directly to the lachrymal passages, either by a spontaneously formed or artificial opening in the sac, or by the previously slit lachrymal passages. In the latter case it is necessary to employ special instruments constructed more or less on the principle of Lallemand's *sonde à la curette*.

"It is unnecessary to say that when the internal incision is adopted (the real advantages of which I recognise) catheterism of

the passages must be continued till lachrymation has completely disappeared. Here, as in the case of cicatrices in every other situation, the cicatrix which follows the section has a tendency to contract; and it is only by dilatation that the consecutive stricture can be obviated."

The fourteenth, fifteenth, and sixteenth lectures are principally occupied with a continued discussion of the surgical treatment of dacryocystitis.

The sixteenth lecture concludes with the following considerations on the medical treatment of the affection, which, as the author remarks, must never be neglected:—

"As the patients are frequently the inhabitants of towns, children and adults of lymphatic temperament or scrofulous constitution, it is necessary to prescribe a very nitrogenous substantial alimentation, and the use of fatty substances and fermented drinks. The open air and residence in the country are likewise exceedingly beneficial. The medicines which prove of utility are preparations of iron, bitters, iodide of potassium, the antiscorbutic syrup, and, in a special manner, cod-liver oil.

"When the dacryocystitis is of syphilitic origin we require to employ the usual treatment for the generally late manifestations of that dyscrasia. The basis of that treatment should consist in the administration of iodide of potassium in comparatively large doses—one or two grammes daily, or even more. Mercurial frictions must not be neglected. Tonics and cod-liver oil intervene efficaciously in modifying the ordinarily lymphatic temperament and debilitated constitution of patients suffering from chronic dacryocystitis. Specifics may also be prescribed at the same time."

We take leave of the volume of Professor Panas by recommending it to the favourable notice of our readers.

Les Eaux Minérales du Mont-Dore; Topographie, Propriétés Physiques et Chimiques, Clinique Médicale. Par Le Docteur BOUDANT, Inspecteur-Adjoint de ces Eaux, Chevalier de l'Ordre de la Légion d'Honneur. Pp. 528. Paris: J. B. Baillière et fils: 1877.

THE work of Dr Boudant, though not perhaps altogether free from the influence of an amiable and interested friendship for Mont-Dore, must not be classed with the common shoal of advertisement-books constituting the pseudo-clinical *littérature balnéaire* with which the Parisian medical profession and the public are gratuitously supplied during the early weeks of each succeeding summer. On the contrary, the work of Dr Boudant may be accepted as a good account of the mineral waters, climate, promenades, general amenities, hotels, and pharmacies of one of the most important

health-stations in France. Data are supplied from which physicians accustomed to prescribe mineral waters can decide, at least in a general way, whether their patients are likely to benefit by a sojourn at Mont-Dore during its season, which, we may remark, begins on the 1st of June and extends to the 30th of September.

Three hundred and sixty of Dr Boudant's pages are occupied with detailed clinical histories, having every trace of genuineness and reliability. Three hundred of the three hundred and sixty pages are occupied with pulmonary affections, for the cure and alleviation of which the conjoined influence of the mineral waters and the mountain air often prove of signal benefit. Mont-Dore is 3300 feet above the level of the sea, and has therefore an altitude 1000 feet greater than the Eaux-Bonnes.

The waters of Mont-Dore seem to prove very beneficial in "caseous" phthisis, and to be contraindicated in "tubercular" phthisis. They are specially useful in emphysema, nervous asthma, dyspeptic asthma, and canine cough, likewise in uterine catarrh, leucorrhœa, and chronic diarrhœa.

The Mont-Dore waters, when received in a tumbler at the source, are warm, limpid, inodorous, and highly charged with gas. The source of Bertrand has the highest temperature, viz., 45° C. Their taste is at first slightly acidulous; then salt; and finally, they leave in the mouth a styptic savour like that of ink. Their specific gravity is only a little higher than that of distilled water, which is explained by the augmented volume they derive from the large quantity of carbonic-acid gas with which they are charged. Chemically considered, their composition is complicated, and the mineral substances which they contain are very numerous. In general terms, they may be described as bicarbonated, ferruginous, and arsenical. They bear transport and long keeping.

A careful study of the therapeutic uses of the waters and air of Mont-Dore will repay physicians for the time they bestow upon it. Their inquiries, let us add, will be greatly facilitated by the twenty years' experience of them which Dr Boudant has embodied in his valuable volume.

Le Mont-Dore et ses Eaux Minérales: Notice Médicale. Par Le Docteur EM. EMOND, Médecin Consultant aux Eaux de Mont-Dore. Pp. 107. Paris: P. Asselin: 1877.

DR EMOND writes his little book, we presume, more for unprofessional than for professional readers. Be that as it may, he has treated his subject fairly, clearly, and concisely. His therapeutic views are very similar to those of Dr Boudant.

Aperçu sur Les Cures Préventives des Maladies de Poitrine par les Eaux Minérales d'Eaux-Bonnes. Par M. PIDOUX, Médecin-Inspecteur de ces Eaux, Membre de l'Académie de Médecine. Pp. 40. Quimper, 1877.

PIDOUX is widely and favourably known by the work on Therapeutics which bears his name associated with that of Trousseau. He is also well known, within and without the profession, as the eulogist of the Eaux-Bonnes, at which station he has for many years occupied the post of inspector. The sketch, of which we have above transcribed the title, was presented, in 1873, as an official document, to the Minister of Agriculture and Commerce. It is now reprinted for circulation by MM. Chancerelle et Cie., farmers of the waters. In a prefatory letter addressed to the farmers, authorizing them to reprint and circulate the work, "*parmi les Médecins, dans l'intérêt de notre station thermale,*" the author quotes the eulogistic terms in which the memoir was reported upon in July 1876 to the Academy of Medicine by M. Laboulbène. They are to the following effect:—"We have only been able to give a very imperfect abstract of M. Pidoux's interesting study of the preventive treatment of disease by the waters of Eaux-Bonnes. If our colleague were not outside the competitive lists, we would propose to you that he be awarded a gold medal, that is to say, the highest acknowledgment which we have to bestow." To this laudatory description of the work it is unnecessary to add.

The Use of the Membrana Tympani as a Phonautograph and Logograph. By CLARENCE J. BLAKE, M.D., Boston. William Wood and Co., New York: 1876.

THE various forms of instruments constructed for the purpose of obtaining tracings of sound-waves, and to which the name of phonautograph has been given, differ but little in their mechanism, and consist principally of a resonator, or mouth-piece, open at each end, the smaller opening being closed by a membrane, to which is attached a pen or style, by means of which the vibrations of the membrane are traced upon smoked glass or prepared paper, moving at right angles to the direction of excursion of the style, the movement being affected either by drawing the plate horizontally, or by fastening the prepared paper to a revolving drum.

Dr Blake used by preference, as nearly as possible, normal human membrana tympani with the malleus and incus attached. It is readily comprehended that a structure so admirably fitted by nature for the office which it has to fulfil—the reception and transmission of sonorous vibration—should better answer the purposes of experimentation than any merely mechanical device. The

accompanying structures, also the malleus and incus with their attachments, may be made available in the adaptation of the organ to its mechanical uses. The proportionate distribution of the weight of these bones, as Dr Blake has already shown in his paper on the "Mechanical Value of the Distribution of Weight in the Ossicula," in the *Transactions of the American Otological Society for 1874*, is such as to constitute a counterbalance, as it were, to the larger proportion of weight lying above the axial line of vibration of the malleus and incus, thus favouring the vibration of the membrana tympani under certain conditions of tension, and enabling it to transmit more readily the delicate impulses of the shorter sound-waves corresponding to the higher musical notes.

The method of using is as follows:—The membrana tympani with the malleus and incus attached, and with the auricle and other soft parts removed, is firmly fixed to a perpendicular bar sliding in an upright and moved by a ratchet wheel. To the upright is affixed horizontally a metallic stage having a glass bed six inches in length, upon which slides a glass carriage carrying a glass plate. The carriage is drawn by a weight on the end of a cord passing over a wheel at the end of the stage and attached to the carriage. A flexible bell-shaped mouth-piece, or a conversation tube, is inserted in the external auditory meatus and luted in position. A musical tone sounded in the bell or mouth-piece being conveyed to the membrana tympani, will set it in corresponding vibration. The vibrations are traced upon the smoked-glass plate resting upon the carriage by means of a style, which should be made by splitting long wheat-straw, scraping the inner cortical substance away, and separating single fibres; these could be obtained of any desired length, and so far have answered all that has been required of them. A style of this sort is fastened to the descending process of the malleus or incus by means of glue or pitch, in a line with the long axis of the process, and extending downwards for a distance of from half an inch to an inch, according to the size of the specimen and weight of the style, and inclined slightly toward the direction in which the carriage moves. The plate of glass smoked evenly over an ordinary oil-lamp, and attached to the carriage by metallic springs, is placed in position under the style, the point of which is brought lightly in contact with the surface of the plate by the adjustment of the ratchet wheel.

The membrana tympani being set in vibration, and the carriage, drawn by its weight, moving at a right angle to the excursion of the style, a wave-line corresponding to the character and pitch of the musical tone sounded into the ear is traced upon the smoked glass. The smoked plate with the tracings can be floated in varnish and allowed to dry and harden for preservation.

The advantages in using the membrana tympani for the purpose of phonautograms, are evident upon comparison with the various mechanical devices for accomplishing the same purpose, and a con-

sideration of its structure gives sufficient evidence of its adaptability as an instrument for the purpose of recording the vibrations of a wide range of musical tones of varying character.

De L'Echange des Gaz dans la Caisse du Tympan; Considerations Physiologiques et Applications Therapeutiques. Par M. le Dr LÆWENBERG, Paris. Aux Bureaux du Progrès Médical, 6 Rue des Écoles: 1877.

It is regarded as one of the chief otological axioms that, when the Eustachian tube has become obstructed, the air contained in the tympanic cavity is absorbed to a greater or less extent. The general sequences of occlusion of the Eustachian tube, such as increased concavity of the membrana tympani when looked at from the external auditory meatus, with increased pressure upon the fluid of the labyrinth through the intermediate chain of bones, deafness, languor, tinnitus aurium, etc., result from this absorption of the enclosed air in the cavity of the tympanum.

To remedy this, the general practice has been the forcing of air into the tympanum through the obstructed Eustachian tube, either by using the Eustachian catheter, or Politzer's method, as it is called. In many cases, the relief given by the above methods is of short duration, owing, according to Dr Læwenberg, to the speedy absorption of part of the gases of which the air is formed by the fluids with which the air comes in contact. This absorption is aided through the pressure of the atmosphere acting upon the membrana tympani. Dr Læwenberg founds his theory upon the analogy of the cavity of the tympanum to the lung, and from the experiments of Lavoisier, Andral and Gavarret, Regnault and Reiset, Ludwig and Pflüger, with their pupils, concludes that the oxygen of the air is the gas most absorbed. Carbonic acid, of which there is but a very small quantity in the air, is not absorbed; but its quantity is increased in the tympanum as in the lung. By a reference to Rüdinger's *Plates of the Anatomy of the Human Ear*, plate xi. of the first fasciculus, our attention is drawn to the highly vascular condition of the mucous lining of the tympanum and mastoid cells. Whilst the oxygen absorbed is only partially replaced by a given quantity of carbonic acid, there remains a deficiency of air in the tympanum; and, in the second part of his work, our author advises to fill the cavity of the tympanum with air containing more carbonic acid, which would not be absorbed, and therefore the improvement of our patient's condition would remain longer. This can be done very readily by making the patient breathe into, and from, a closed bag; the carbonic acid in the respired air in the bag increases in quantity, and can be forced into the tympanum by the Valsalvian method. This carbonic-acid air can be forced into

the tympanum through the Eustachian catheter. Patients who have been relieved of their distressing symptoms, arising from closure of the Eustachian tube by inflating the tympanum with carbonic-acid air, have spontaneously affirmed that the relief was more decided, and more permanent than inflation of the drums with ordinary air. Dr Læwenberg has also tried hydrogen, which he makes at the time of using from chemically pure materials, but adds: "Il n'est peut-être pas inutile de rappeler qu'il faut éviter le contact d'une flamme, sans cela le mélange d'air et d'H ferait explosion avec une force effrayante." Dr Læwenberg praises the use of the air-douche in the treatment of diseases of the ear, and asks the co-operation of his *confrères* in the establishing of his improvement of the same in the treatment of closure of the Eustachian tube.

The Care and Cure of the Insane: being the Reports of the Lancet Commission on Lunatic Asylums 1875-76-77 for Middlesex, the City of London, and Surrey; with a Digest of the Principal Records extant, and a Statistical Review of the Work of each Asylum, from the Date of its Opening to the end of 1875. By J. MORTIMER GRANVILLE, M.D., F.S.S. London: 1877.

THE *Lancet* Commission, as the author tells us, was designed to ascertain the efficiency of the provisions for the care of the insane; to discover and formulate the proper treatment of insanity; and to collect the statistics of the different asylums round about London. In order to accomplish these important objects Dr Granville visited most of the huge asylums which receive the insane of London, and compiled a series of articles out of his own observation and the files of yearly reports and other documents which came into his hands. We fancy the editor of the *Lancet* also had in view to get a series of entertaining articles for his paper; and if he were satisfied and his readers pleased, and the articles, as they appeared, read and commented upon by those interested in the asylums of the metropolis, the matter might have been comfortably wound up. Dr Granville, however, thinking his papers of more permanent value, has got them republished in two well-printed octavo volumes. He assures us that much new matter has been added—historical, statistical, argumentative, and suggestive. He has got Mr Shoveller, from the Statistical Department, to make computations, and a lecturer on chemistry, through whose kindness it has been possible to include a table of equivalents illustrating the diet-scales of the asylums visited. He even apologizes that the exigencies of space compel him to limit descriptive detail. Dr Granville appears as a critic upon the works of other men, and takes credit to himself for unsparingly saying the truth, so he cannot reasonably object if we imitate him in this respect. In our opinion the book has

too much detail for a systematic treatise, and too much sermonising for a descriptive report. He says that Hanwell and Colney-Hatch are overgrown asylums; we daresay he is right, and his is an overgrown book. There is a prolixity about his lectures and a minuteness of detail about his advice which might be held to imply that he distrusts the common sense of those who are entrusted with the management of the asylums. He often says what is just and true; but we generally find that when we agree with him he has said nothing new; and when we disagree with him, that he has said something commonplace.

As he always chimes in with the Board of Commissioners, save in the merest trifles, he cannot object to the conclusion that his inquiry is superfluous. Towards these functionaries his critical acumen becomes dull, though his brimming admiration of Commissioners does not cross the Tweed. When he refers to the Scotch Lunacy Board it is not to praise it. He looks with a cold eye on the boarding-out system; shakes his head at the desire of our two Commissioners to pull down the walls of airing courts; and reproves their fondness for non-medical superintendents, and their discouraging tone towards medical treatment of the insane. The recommendations which he regards of the greatest importance are quoted in his own words:—

“1. That the Board of Commissioners in Lunacy should be armed with power to enforce the recommendations of the visiting members—after ratification by the Board—upon the visiting committees of county and borough asylums, and the governors of hospitals; and the power of compelling compliance on the part of proprietors of licensed houses should be more direct than that contingent upon the discretion of refusing to renew a license.

“2. That patients labouring under mental derangement should be removable to a public or private asylum, as to an hospital for ordinary disease, *without certificate*. Within eighteen hours of admission, notice should be sent to the office of the Commissioners in Lunacy, and an order be issued from the Board to an official medical examiner, duly appointed by the Board, and not engaged in private practice, either as medical attendant or medical witness, who should at once proceed to the asylum, and report directly to the Commissioners as to the nature of the case and the expediency of detaining it. If residence in the asylum were deemed desirable, the Commissioners could make an order to that effect—such order to have the legal force of a certificate of insanity—and by the visits of their inspectors, provide for the continuous watching of the case. In this way, for twelve months at least, every new patient would be kept under official observation, a measure which could scarcely fail to exert a satisfactory influence on the treatment.

“3. That the power of signing certificates of lunacy should be withdrawn from ordinary medical practitioners, magistrates, and clergymen, and entrusted only to the locally appointed agents of

the Lunacy Board, who, as I have said, should not be allowed to engage in practice, or appear as skilled witnesses in courts of law on the subpoena of any party to a suit; but only, as occasion might arise, at the summons of the Court."

Dr Granville is willing to free the medical superintendent from the control of the local committees, whose ignorant and presumptuous intermeddling is, in some cases, justly castigated; but the medical superintendent would clearly not be the gainer, as he would only exchange a weak and loose rule for a strong and stiff one. Singularly enough, all proposals for improvement in the management of asylums seem to be based upon the notion that it is desirable to weaken and impede the authority of the superintendent, though there is never the slightest proof given that he either has too much power or has misused what he has got. Again and again does Dr Granville repeat that a patient in an asylum is a patient under treatment, and that treatment includes management and is always medical. Now, no principle is less doubtful than that in medical practice the man who observes and studies the patient should also be the one who directs the treatment; but here Dr Granville proposes that it should be in the power of the Commissioners in Lunacy to direct and over-rule the treatment, at least if they can get their fellows to ratify what they have recommended. For example, the Board of Lunacy might order all mechanical restraint to be disused, even when a medical superintendent thought it useful or necessary, as, had such a Board existed twenty-five years ago, it might have impeded Dr Conolly in his grand experiment at Hanwell for the disuse of restraint. What would be said if the different public hospitals for ordinary diseases were put under a Board who should use the powers of the Government to over-rule the treatment of the physicians and surgeons, a Board which might, for example, order Mr Spence to adopt the antiseptic system of dressing without any further demurring, and forbid Dr Lister to tie veins or open the knee-joint, or who might prescribe the use of mercury, or insist that in place of splints the fractured ends of sundry long bones should be held together by hospital attendants? There is too much danger already of the Lunacy Commissioners introducing a Chinese uniformity fatal to all improvement and differentiation in the treatment of the insane; and Dr Granville assures us that, with all the changes introduced, the percentage of cures of insanity is rather diminishing than increasing.

Dr Granville proposes that all those confined in the asylums should be imprisoned under the warrant, not of ordinary magistrates, but of the Commissioners in Lunacy, who should even have the power of appointing all those qualified to sign certificates, whom apparently they could dismiss or keep out of their employment at their pleasure, and who should be excluded from other work save that of being medical officers of health "of convenient districts."

Dr Granville would allow the relations and friends of the supposed lunatic, if strong enough, to drag their victim to a public asylum, there to be imprisoned for three days at the discretion of the superintendent, till the Commissioners or their delegates had decided upon his fate. He does not explain what he would recommend, if the so-called lunatic, an admirer, perhaps, of the Habeas Corpus Act, resisted this summary proceeding, or if some of his friends took another view of the case, and interposed to rescue him from his captors. Is it not possible that, when the struggling mass of combatants arrived at the asylum, the medical superintendent might have some difficulty in distinguishing the sane from the insane? And how would this work in thinly-peopled districts, such as we have in Scotland, where the medical practitioner, though often far to fetch, is really the only available man who might be expected to distinguish a lunatic? We think it a mistake that medical men should be allowed to sign certificates of insanity when they have never studied the subject; but the best remedy for this is to ensure that all future licensed practitioners do study the subject and pass an examination upon it. It must also be remembered that the Board of Lunacy is practically almost irresponsible, and ought not therefore to be allowed to dispose of money raised by taxation.

There seems to be an epidemic of talk at present against private asylums. The usual argument is stated by Dr Granville in the words of a former member of Parliament and editor of the *Lancet*. A wealthy and eccentric individual is placed by a designing relation in a private lunatic asylum. "Then," says Mr Wakley, "what motive of action is given, under the present system, to the person in whose charge the lunatic is placed? Why, it calls into operation the principle of selfishness, common to human nature. The proprietor of the asylum will argue that he gets £400 a year for the charge of the gentleman, so long as he remains under that roof; and if he recovered, then he (the proprietor) would lose that annual amount. Suppose an honourable gentleman were to go to a doctor and say, 'My liver is diseased, and so long as it remains so, I will give you a £100 a year.' What motive of action in such case would be given to the doctor?"

What motive, indeed? Why, the desire of freeing a human being from pain and sickness, or of rescuing him from death, the desire of increasing his reputation by adding a new cure to his list, the desire of pleasing man and the fear of offending God. Is it not the course of ordinary practice that the doctor is paid as long as his patient is ill; nor do we know of a single instance where a patient was suffered to remain under sickness a day too long through the guilty negligence or crafty arrangement of his medical attendant. Every one who knows anything about lunatic asylums, whether public or private, must know that to detain a sane man as a lunatic would be too dangerous a transaction for the

most unscrupulous and designing of keepers of private asylums to attempt. It is true that there are always weak people whose sanity is somewhat doubtful; but, to secure their liberty, the ordinary motives for honest action and the inspections of the Commissioners in Lunacy seem to us sufficient. In fact, when we consider how difficult and doubtful the question of sanity or the advisability of detention often is, it is amazing how few cases of improper detention have ever been proved. We may recall that, at the Royal Commission of inquiry made in Scotland twenty years ago, there were a great many people found imprisoned on very informal certificates or warrants, or on no certificates whatever; but there was no one found under lock and key who was clearly sane. It may be that too many merely weak-minded, imbecile, and neurotic people are in lunatic asylums; but, to help this, we must look for an awakening of medical opinion, not to a detection of private frauds; and we are convinced that the greater proportion of these ill-judged detentions will be found in district and pauper asylums, and that the principle of selfishness which keeps them there exists without the walls, and not within. Private asylums take all varieties of shapes and sizes to fit the private tastes and needs of our complicated society. Our acquaintance with them is merely casual; but we doubt not that they have their faults and shortcomings like every other thing human. We strongly object to the view which has been broached in some medical journals, that the Government, which is already overloaded with administrative details, should become the trustee of all the lunatics in the three kingdoms; and, as for Dr Granville's proposal, that keepers of private asylums might be paid for the treatment of a case instead of the time occupied in curing it, we cannot conceive how it could be feasibly carried out.

The Student's Manual of Venereal Diseases. By BERKELEY HILL, Professor of Clinical Surgery in University College, London; and by ARTHUR COOPER, House-Surgeon to the Male Lock Hospital. London: Smith, Elder & Co.: 1877.

THIS Manual has been compiled from Mr Berkeley Hill's larger work on *Syphilis and Local Contagious Disorders* by the removal of the summaries at the end of each chapter, and publishing them in this separate form.

The whole subject of syphilis is condensed into 54 small pages, and, considering the accurate manner in which the subject is treated, the authors deserve the thanks of all medical students for placing within their reach the handiest book on syphilis ever published.

There is really little to criticise. We would only refer to this sentence on contagion by inheritance:—"As the disease subsides

in the mother, the chances of escape for the child greatly increase, and, after the second or third year, the child commonly escapes." We consider the time here stated much too short. The power of bearing syphilitic children remains with the mother not unfrequently till the seventh or eighth year after infection. With the father it is different, as, we believe, his power of begetting syphilitic children ceases when the danger of *directly* infecting the mother is past; the period in his case would be limited to two or three years.

We are glad to find the authors are dualists. On high authority, we had been led to believe that no living advocate was to be found in London of that exploded theory. The rest of the work treats of soft chancre, gonorrhœa, and their complications. There is also a list of useful formulæ appended. We have advised every student of our acquaintance to get this Manual.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LVI.—MEETING IX.

Wednesday, 6th June 1877.—Dr H. D. LITTLEJOHN, *Vice-President, in the Chair.*

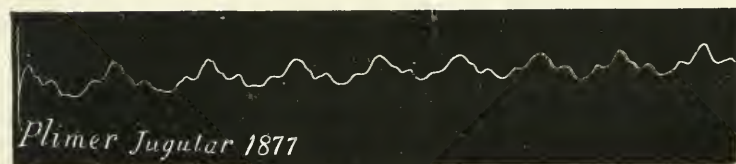
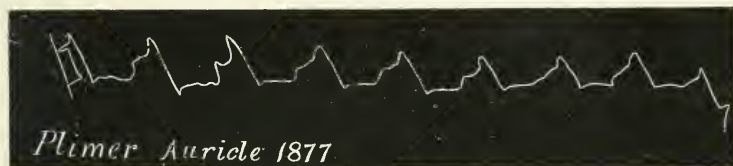
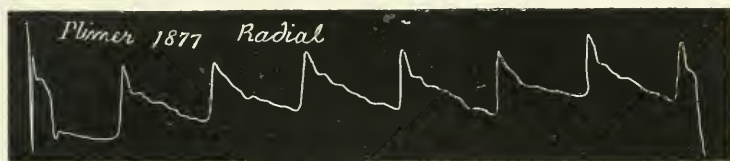
EXHIBITION OF PATIENTS, PATHOLOGICAL SPECIMENS, ETC.

I. *Mr Bell* showed the LAD whose case he had formerly related to the Society,¹ where a large piece of paling, 9 inches long, had been driven into the armpit. They now saw the cicatrix of the wound, and it was interesting to note how much it had diminished in size. The result was a very good instance of what might be done by careful drainage, to which, even more than to antiseptics, the good results might be attributed. The risky part in treating the case was pulling out the piece of paling, as he did not know how the subclavian vessels might be implicated. As they could now see, there was no interference with the movements of the arm. The shoulder, however, was a little cocked up.

II. *Dr G. W. Balfour* showed THREE SPHYGMOGRAPHIC TRACINGS TAKEN FROM THE RADIAL, LEFT AURICLE, AND RIGHT EXTERNAL JUGULAR OF A CHLOROTIC PATIENT. Anæmic murmurs according to Hope, Beau, Bellingham, etc., were generated at the aortic orifice; while according to Hughes their seat was the pulmonary orifice;

¹ *Edin. Med. Journal*, vol. xxii., p. 1026.

while Parrot placed them in the tricuspid area, and Naunyn to the left of the pulmonary area. This latter situation indicated slight dilatation of the heart generally; but Hilton Fagge had disputed this in the last-issued volume of Reynolds's *System of Medicine*. The interest of the tracings was that the pulsation to the left of the pulmonary area was distinctly shown to be not arterial but auricular in its character; and the importance of this fact lay in the confirmation thus afforded of the theory advanced, and in the satisfactory manner we were thus enabled to connect the simple and curable malady chlorosis with the serious one of mitral regur-



gitation. He was indebted for these tracings to the perseverance and ingenuity of Dr G. A. Gibson, his present resident physician. The peculiar slope of the auricular tracing, he ought to say, was due to the position of the clockwork.

III. *Mr D. J. Hamilton* showed THREE MICROSCOPICAL SPECIMENS OF FATTY EMBOLUS OF THE PULMONARY ARTERY occurring in a lad aged 14. It was a condition which sometimes occurred in simple fractures of bone where the medullary cavity was opened, the contained oil being also led into the circulation. The patient's liver, which was very fatty, had been accidentally ruptured, and he died with comatose symptoms four or five hours after the accident. On examining the lungs he found the pulmonary artery, to its minutest branches, plugged with oil. Similar cases had been recorded by Wagner, Zenker, Czerny, and Busch, such an occurrence accounting most probably for many deaths hitherto set down

as due to shock. The sections shown had been stained with perosmic acid, which darkened the oil blocking the pulmonary branches.

IV. *Mr D. J. Hamilton* then read a paper on TUBERCLE IN THE HUMAN LUNG.

Dr Littlejohn said the Society had listened with much pleasure to Mr Hamilton's most interesting paper, and would be glad to hear any remarks on the subject. He hoped Mr Hamilton would, at some future period, give them additional information on the subject.

Dr Wyllie had great diffidence in making any remarks, as there were others present who were much more qualified to speak upon the subject than himself. Dr Hamilton had alluded to the many changes in the use of the term tubercle. Long ago, any form of disease, if nodular, was considered tubercular. Laennec then limited it to those forms which were small, as in an ordinary phthisis. Virchow and his followers examined these, and finding many of them inflammatory, limited the term to those not so. The next step was the investigation of tubercle artificially produced. Villemin, Wilson Fox, Burdon Sanderson, Cohnheim, and others, showed that the lymphatics were the parts involved. This accordingly seemed to settle the lymphadenomatous nature of tubercle. The last series of observations was by Wagner, Schuppel, Buhl, Klein, etc., showing that tubercle of spontaneous origin was identical with catarrhal pneumonia. Dr Hamilton had said that the cells in tubercle were larger and more actively proliferating than in catarrhal pneumonia. This, however, was difficult to settle; and therefore the question came to be, Is tubercle a catarrhal pneumonia? Probably true tubercle was at first a mere catarrhal pneumonia in the vesicles of the lung forming giant cells and caseating. Dr Hamilton had said that tubercle of the lung did not undergo caseation. He had had no opportunities during the last year or two of investigating the subject, but he thought that Dr Hamilton might be correct in saying that it did not occur in the lung. If so, however, it was certain that the law did not hold good with regard to the other organs. In a recent paper in *Virchow's Archives* it had been shown that in the testis true tubercle did caseate after having formed giant-cells. He himself believed that tubercles were really due to catarrhal pneumonia; indeed, in children, Dr Hamilton had said that the so-called miliary tubercles were really catarrhal pneumonia. From what had been said, it would be seen that he did not take the same view as Dr Hamilton; but he thought that a great step had been made in the recognition of giant cells in tubercle. He begged to congratulate Dr Hamilton on his able paper.

Professor Gairdner did not wish to speak on the strictly histological part of the subject, because he really had no right to do so, and did not desire to seem an authority on the subject. No one was more favourably placed than himself to explain how those educated

in the old views were affected by recent ones. He agreed with the previous speakers as to the ability of Dr Hamilton's paper. All of them in their remarks had gone back to Virchow. The time, however, at which he would begin was that of Lebert, when nothing was tubercular that did not contain tubercle corpuscles. Thus, all of them for many a year went in pursuit of these little angular bodies. Since that time there had been many revolutions, and now they were getting definite views. Nothing hitherto had been so satisfactory to him as the views of Drs Hamilton and Wyllie, and they probably ought to be regarded as complementary. But how to reconcile the new views with the old history of a disease so well-known, so widespread and devastating in its tendencies—how to correct the story of detail as given by Louis in accordance with the modern views, was a much more difficult task, which he would not attempt. He was free to confess that on first attempting to take in the practical conclusions of Niemeyer, for example, he experienced a shock somewhat similar to that felt by certain persons in ecclesiastical courts when a new heresy was broached, inasmuch as the doctrine taught was nothing less than that the great majority of cases apparently of tuberculosis were not that at all. Unlike those, however, who asserted the non-Davidic origin of the Psalms, and that Moses did not write Deuteronomy, there was happily no chance of Mr Hamilton being suspended for his views. On the contrary, we allowed Empis to say that the well-known miliary granulations of the pia mater were not true tubercle; and Virchow to hold that the absolutely typical form of the true tubercles was to be found in these same miliary granulations of the pia mater. Indeed, all reaped great advantage from free opinion in such cases; and he hoped that as truth is one, so all would come right in the end.

Mr Hamilton said that in regard to Dr Wyllie's remarks he had in his paper said that the corpuscles formed at first by proliferation are not exactly the same as those in catarrhal pneumonia. He knew, however, that it is very difficult, indeed impossible, in the first stage, to separate tubercle from catarrhal pneumonia. Very soon, however, the differentiation takes place, because in catarrhal pneumonia the nodules caseate, but in tubercle, organization and a distinct tubercular structure is formed in many or all. The appearances, indeed, were so remarkable that students could easily make out the difference. In the third stage there might be caseation in tubercle of the lung, but it was rare, limited, and after the tubercle had been produced. It should be kept in mind that tubercle in the lung was by no means a non-vascular structure.

V. *Dr John Duncan* read a paper on THE USE OF MERCURY IN SYPHILIS, which appears at page 154.

VI. *Dr A. G. Miller* then read a CASE OF VENEREAL INFECTION WITH TWO DIFFERENT SORES RESULTING.

Dr Littlejohn asked if there had been no second infection.

Dr A. G. Miller said that he had only the patient's word for that, that there had been only one connexion.

Mr Bell said, that all who knew the character of *Dr Duncan's* writings, always expected from him close logic accurately and pleasingly put. In no previous paper had this been more marked than in to-night's communication. He was sorry that *Dr Duncan's* paper had been read before *Dr Miller's*, because in the former they had something definite to criticise, whereas in *Dr Miller's* they entered on a vast sea. One point he was at present interested in, was the state of the blood, whether there was anæmia or not. *Dr Duncan* was probably aware of the interesting researches of *Keyes*, *Von Buren's* assistant, by means of *Malassez's* apparatus. *Keyes* had proved that in secondary syphilis with anæmia, mercury in small tonic doses had a good effect, as it increased the number of red blood-corpuscles, diminishing their relation to the white ones. And in such cases the patient improved. As to his own practice, he began under the shadow of his old master with an aversion to mercury. He now, however, used it for symptoms, and found it good in anæmic cases. He could corroborate *Dr Duncan's* remark, that in tertiary syphilis iodide of potassium often did no good until combined with mercury, and generous diet, with careful watching, added. One curious factor in syphilitic infection was the nature of the poison in the woman. He could give many curious instances showing that the same woman might give, under similar circumstances, a more virulent attack of syphilis to a foreigner than to one of her own race. Thus, naval officers knew that they got worse syphilis in Lisbon than in London or Glasgow.

Dr Cadell was much pleased with *Dr Duncan's* paper, and was glad to hear *Mr Hutchison's* term antidote not applied to mercury. *Dr Duncan's* average of two years was, he believed, a correct estimate. As to the treatment of syphilis by mercury, he had no experience. He had never yet administered it at all, as he was quite satisfied with a non-mercurial treatment. With a good constitution the patient got all right. One weak point in the administration of mercury was that it was not given where the eruption was of a low pustular type. They would expect that in the worst cases mercury would do most good. The severity of the disease he believed to depend on the state of the constitution, *i.e.*, if a low constitution, then they had a bad attack. He had been much interested in *Dr Duncan's* paper.

Dr Duncan had really little to say in reply. He would only refer to *Dr Cadell's* remarks on the influence of mercury on pustular syphilides. In his paper he said that at one time it was deemed inadvisable to give mercury in such. In no case, however, did mercury give better results when combined with tonics and iodide of potash occasionally.

Part Fourth.

PERISCOPE.

WHAT IS THE USE OF A HOSPITAL?—Very various answers, it would seem, are given to that question, and very various results accrue in practice. The primary idea in most minds seems to be that hospitals are institutions for the gratuitous relief of the sick or suffering. That, perhaps, was their original intention, and no ulterior object was definitely proposed. They are vast eleemosynary establishments, and some of the disadvantages of all such establishments have attached to them. The Middle Ages were the palmy time for hospitals of all kinds, and the notion grew up that they were something like the air or the water, of which all persons who were in want had a natural right to avail themselves. A similar notion, according to the doctors and other good observers, prevails at the present time. Few persons, it seems, no matter of what class, have any scruple in making use of a hospital whenever it is convenient to them. It would, perhaps, be excusable enough for the poor to flock to them without scruple; but by all accounts many members of the middle class do not hesitate to save their pockets by seeking gratuitous advice as out-patients from the hospital staff; and even wealthy persons are not ashamed to send their dependents there, and satisfy their consciences by some paltry donation or subscription. It is the misfortune of all established institutions, from the church downwards, that they are supposed to be rich and able to be charitable out of their own resources, and consequently at every one's service.

But, in point of fact, if we except a few favoured institutions, hospitals have of late assumed a further character, which greatly aggravates the difficulty of their position. From the fact of such numbers of sick people coming to them for advice or being treated within their walls, they have become the greatest of all schools of experimental science. No other science has the advantage of such numerous and various phenomena being brought under constant and minute observation. Every week thousands of forms of disease and injury are brought under the most skilled inspection in the world, and are subjected to any treatment that may be thought desirable. There is no remedy or mode of surgical treatment which cannot be tested in hospitals under the most favourable opportunities for observing its results. These are carefully noted and published, and gradually an incredible mass of experiments and research respecting our physical nature is thus being accumulated. In this respect hospitals are the very ideals of a scientific man. But for the same reason they are becoming more and more the very ideals of what is desirable for the sick. The treatment of disease in them is daily acquiring a sort of elaboration of perfection.

The vast institution which faces the Houses of Parliament on the Thames, with its several blocks of buildings and its elaborate construction, is only an extreme instance of what is now provided at all our great hospitals. A patient once admitted to a hospital is no longer, as he was in great degree of old, simply a person who is to be charitably relieved and assisted. He is a natural specimen of disease upon whom all the resources of medical art and science are to be lavished. If he needs surgical treatment, the most brilliant surgeons in London will operate on him. He will be subjected to the latest and most delicate form of anæsthetics, and when the operation is over will be watched, nursed, and fed with the most scrupulous care. Not merely the reputation of the surgeon, but a point of surgical science will be depending on his recovery. The result of the operation will be carefully recorded, and not a loophole will willingly be left for its failure. It will be the same in disease. A patient with any special malady will receive attention scarcely less than that bestowed upon a prince. If necessary, he will be secluded from others; he will be watched day and night; he will often, in these days, have the most refined hands to nurse him; and the first physicians of the day, who may be unable to spare time to call on some of their wealthier patients who are able to pay them, will on no account neglect their daily visit to the hospital. Not merely physicians of the highest reputation, but, what is in some cases better, those who have their reputation still to make, will have their eyes upon him, and every comfort which can be devised by modern art to facilitate his recovery will be at his disposal. He can enjoy many comforts which none but the very wealthiest can afford to have at their own homes, and he is certain that, in any emergency, the best resources of modern science are instantly available for him. In short, a hospital is now not merely a place in which the suffering are relieved, but a place in which they receive benefits open to scarcely any other class in the community. The consequences seem to be that they are becoming more and more unscrupulously used. Statistics were quoted in a meeting held at the Mansion House yesterday, which go to show that the numbers attending hospitals increase out of all proportion to the growth of the population and to its wealth. There can be no question a great injustice is thus being done to the doctors. They are at the mercy of the public in the matter. They cannot refuse their services, and they would damage the scientific value of hospitals if they were not to leave them open to all comers. But it is most unreasonable that they should give their time and skill for nothing to persons who are perfectly capable of paying at least some reasonable fee for it.

The question raised at the Mansion House was whether it is not possible to attain two desirable ends at the same time by establishing hospitals for the well-to-do, where all the benefit of scientific treatment shall be available, but where it shall be formally paid for, and where every one may enjoy it with a clear conscience.

As a matter of fact, though there are, as we have said, a good many persons very unscrupulous in this matter, yet the vast majority of those who have comfortable homes and fair means of their own are excluded from the immense advantages we have described as attaching to treatment in hospitals. People, for instance, spending incomes of from a hundred to a thousand a year must needs live in very moderate houses, where, in the event of illness, the whole house necessarily becomes the patient's apartment. The noises, the business, the air of the house are all round him; the children are in the way; the nurse, whether she be the wife or not, has numberless other things to attend to; and there is nothing either in the construction of the building or in the ordinary arrangements of the household, or in its appliances, to meet the demands of sickness. If they are to be provided, it must be at a cost which, by the anxiety it entails, aggravates the pressure of the illness; and thus exerts a most unfavourable influence upon its progress. In his or her own house a patient of this class cannot possibly obtain the best scientific treatment of the day. The expense of securing the best professional advice would alone be felt to be an extravagance, but the lack of all the refinements of modern appliances and of the constant vigilance to be obtained in hospitals is, perhaps, a still greater loss. But is there any reason in the nature of things why it should be incurred? The custom is already well established in some parts of the country of establishing "Cottage Hospitals," in which the sick of a village can be housed together, treated systematically, and visited by the doctor with economy of time, and therefore with greater frequency. Why should not a similar plan be adopted for the well-to-do? Why should there not be in every neighbourhood of a great city like this a sort of club-house for the sick, in which each patient should bear his fair share of expenses? We have innumerable and daily increasing clubs for the wealthy, the idle, and the luxurious. By combining together to hire and maintain one such establishment, a number of people of the middle class we are contemplating succeed in securing comforts which they could never enjoy in their own homes. Why should they not avail themselves of a similar resource in illness, when luxuries are far more essential, and when they would be conferring a boon on their families as well as on themselves? Such an arrangement would be a boon alike to doctors, to patients, and to families in general; and after the favourable reception which the proposal yesterday encountered it is to be hoped it may be fairly tried.—*Times*, 28th June.

GIANT-CELLS IN SYPHILOMATA.—Dr Thadäus Browicz, of the University of Cracow, contributes a short but interesting paper on the above subject to the *Centraltb. f. d. Med. Wissenschaften*, for 12th May 1877. Since an impetus was given to the investigation of the nature and resorts of giant-cells by Kölliker in 1871-72, these structures have been found in diverse situations; but, except

in so far as they were, according to Kölliker, "bone-absorbers," no fact or property of much interest in connection with them has since been recorded. Baumgarten, however, has recently pointed out that their occurrence in syphilitic deposits is so far interesting, as conditions, for example, in the brain and testicle, which would formerly have been pronounced tubercular on account of the presence of these cells, can now no longer be so diagnosed with the same confidence, as the pathognomonic cell has found its way into syphilomata. The collection of well-investigated cases is, therefore, in the meantime, desirable, that we may have sufficient data some day to draw, it may be, conclusions of practical importance, or, as seems not altogether improbable, that we may dismiss giant-cells as altogether unimportant; for, given, a primitive round-celled tissue, and observations hitherto reported seem to imply, that we will not have far to look for a giant-cell.

Browicz relates two interesting cases, in both of which a considerable number of "exquisite" giant-cells were discovered in the granulation tissue of syphilitic deposits in internal organs.

The first case was that of a married woman, 40 years of age, who died of extensive pneumonia of the left lung, in whom there existed, besides cicatrices of the external genitals, and diffuse interstitial inflammation of the liver, three knots about the size of a pea or small bean in the muscle of the anterior wall of the right auricle. These were of tolerably firm consistence, and were sharply defined from the muscular tissue. Their surface on section presented several whitish-yellow spots, about the size of a pin's head, in the midst of grayish-red tissue. The endocardium at these places was thickened and opaque.

The second case likewise occurred in a married woman, 45 years of age, who died of acute œdema of the lungs in consequence of stenosis of the larynx. Evidences of syphilitic infection were present. Besides cicatrices on the right tibia, which were firmly attached to the bone, and a radiating cicatrix on the right forearm and left side of the thorax, there was a clearly-defined tumour about the size of a bean in the submucous tissue of the right lower vocal cord in the larynx, which projected towards the cricoid cartilage, pushed forward the posterior wall, and encroached upon the lumen of the larynx. The ventricle of Morgagni was quite obliterated, and the chink of the glottis narrowed. The mucous membrane over it was in no way different from that clothing the rest of the organ, and was not ulcerated. The tumour was tolerably firm, consisted of reddish-gray tissue, and showed a cheesy centre.

Besides the giant-cells mentioned, and which were most numerous in the first case, the histological details were not peculiar, consisting principally of round cells deposited in a delicate connective-tissue stroma, together with spindle-shaped cells, chiefly met with near the circumference, and, in greatest number, round bloodvessels. The degenerated portions of the growths consisted of finely granular material with a few nuclei. Browicz mentions, in conclusion, that

he had sought in vain for giant-cells in a portion of tissue excised from a primary syphilitic ulcer of the upper eyelid.

PENETRATING WOUND OF THE ABDOMEN, WITH PROLAPSE OF THE OMENTUM.—Recovery without reposition.—*Centralb. fr. Chir.*, No. 2, 1877.—A man, 32 years of age, was stabbed in the abdomen with a knife, rather below, and to the left of, the umbilicus. The omental protrusion which followed was as large as the egg of a goose, and was caught by two stitches which united the edges of the wound. The prolapsed portion became completely gangrenous, and, though an abscess formed around the wound, the patient ultimately recovered.

ON A NEW WAY OF APPLYING MR LISTER'S METHOD OF TREATING WOUNDS. BY EDWARD LAWRIE, Resident-Surgeon, Medical College Hospital.—There is no difficulty in carrying out the antiseptic treatment of wounds in this climate, except that the indiarubber parts of the apparatus, required for the purpose, get out of order so rapidly as to render their constant renewal, direct from home, an absolute necessity. In the out-patient practice of the Medical College Hospital, frequent accidents with the spray-producer were found to be such a serious drawback to the success of the antiseptic system, that, during the latter part of 1875 and the beginning of 1876, the antiseptic spray was abandoned, and a fresh plan of carrying out the system adopted. This consisted in endeavouring to make all wounds practically superficial, and avoiding, as much as possible, the formation of cavities: for instance, in amputations of fingers and toes, and in the removal of tumours, the use of sutures was discontinued, the flaps being left completely open, and the whole surface of the wound kept in contact with a mild antiseptic, such as boracic ointment. It is always practicable, and generally easy, to keep a superficial wound aseptic, and accordingly this plan was found to answer very well in small cases, such as the minor operations of ordinary dispensary practice. No opportunity of carrying it out on a large scale occurred until May 1876, when I had temporary charge of Dr Palmer's wards, while he was absent on leave for six weeks. The first time it was used for a deep wound, was in a case of excision of the clavicle, for a non-malignant tumour of the inner half of the bone. The operation was performed with the usual antiseptic precautions, and the edges of the wound stitched with horse-hair sutures; but, owing to some accident, putrefaction set in on the third day, and this was at once followed by erysipelas and other symptoms of septicæmia. On the seventh day putrefaction still continued, and the symptoms of septic poisoning were increasing. I therefore laid the wound open, washed out the cavity with carbolic lotion, touched all the sloughy points with the strong solution of carbolic acid in spirit, then washed it all out repeatedly with boracic lotion, and finally completely filled the cavity, which

was both large and deep, with Lister's boracic ointment, covering the whole surface lightly with dry boracic lint spread with boracic ointment. Putrefaction was arrested immediately, and never returned, and all the symptoms of septicæmia entirely disappeared within forty-eight hours.

The next case in which it was used was one of excision of the right half of the lower jaw. The operation was severe, and the wound, which was very large, opened into the cavity of the mouth. No sutures were employed; the wound was left open, and stuffed full enough with boracic ointment to keep its edges wide apart. Granulation was established about the fifth day, the patient never had any fever, and was not even kept in bed after the first twenty-four hours. From first to last there was no putrefaction, and the cicatrix which resulted was small and clean. Since May 1876, the month in which this operation was performed, this plan has been followed in the treatment and dressing of all wounds that have come under my care, except those from such operations as hare-lip, etc., where union by first intention is desirable. Moreover it has been adopted universally in the hospital, with the remarkable result, that in no case in which it has been used, either of amputation¹ or excision, has septicæmia, pyæmia, or death followed.

There is nothing brilliant about this method of treating wounds, as union by first intention is not sought for, and suppuration is not avoided; but it is so easy to carry out and so certain in its results, that it is peculiarly applicable to Indian practice and field surgery. Certain precautions have to be taken in its employment; thus, in amputations, it is necessary to make the flaps, particularly the skin part of them, of great length, otherwise the cure is tedious. Obstacles of this kind, however, which may possibly detract from its perfection as a mode of treatment, do not affect its usefulness, and are more than counterbalanced by the freedom from danger which it confers on surgical patients, and the purity it ensures in the atmosphere of the wards in which they are treated.—*Indian Medical Gazette*, June 1877.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By W. HANDSEL GRIFFITHS, Ph.D., L.R.C.P. Ed., Licentiate of the Royal College of Surgeons of Edinburgh; Lecturer on Medical Chemistry in the Ledwich School of Medicine, Dublin; Corresponding Member of the Therapeutical Society of Paris, and of the Pharmaceutical Society of St Petersburg; Honorary Member of the Ontario and Chicago Colleges of Pharmacy, etc.; Librarian to the Royal College of Surgeons in Ireland.

[The author of these Reports will be glad to receive any books, pamphlets, or papers relating to Materia Medica or Therapeutics. They may be forwarded through the agencies of the *Edinburgh Medical Journal*.]

INJECTION OF CARBOLIC ACID IN ERYSIPELAS.—Dr G. Böckel thinks that the subcutaneous injection of carbolic acid is the most

¹ Including amputation at the hip and shoulder.

certain means we possess of arresting the progress of erysipelas. He injects a certain quantity of a one and half per cent. solution night and morning, at about a third of an inch from the inflamed border at several points.—*Gazette Med. de Strasburg*. Quoted in *Practitioner*, April 1876.

CARBOLIC ACID IN THE TREATMENT OF BOILS AND CARBUNCLES.—Dr Peter Eade believes that he discovered in carbolic acid a safe and manageable remedy, and one which seems to be specifically destructive to the life and progress of boils and carbuncles. The essentials for its proper action appear to be these:—1. The acid must be applied in *strong* solution (four or five parts of the acid to one of glycerine); 2. It must be brought into contact with the diseased tissue, for it appears to exert no action on it through the unbroken skin. To this end if sufficient opening do not exist when the case is first seen, a proper one must be made in the very centre of the disease by some appropriate caustic, and perhaps the acid nitrate of mercury effects this better and with less discomfort than any other; 3. The acid solution must be occasionally reapplied to and into the hole thus formed or those already existing; and Dr Eade has found it a good plan to keep a piece of lint wet with a weaker solution constantly over the sore.

Dr Eade agrees with Mr Startin in regarding boils and carbuncles as of a parasitic nature.—*British Medical Journal*, 1st July 1876.

INJECTION OF CARBOLIC ACID FOR THE CURE OF NÆVUS.—In the *British Medical Journal* for 8th April 1876, Mr Messenger Bradley records a case of a large veno-cutaneous nævus which he treated successfully by repeated injections of carbolic acid.

CARBOLIC ACID IN GLYCOSURIA.—Dr Garnier records a case of glycosuria which was treated very successfully by carbolic acid. Equal parts of carbolic acid and alcohol were mixed, and of this solution two minims were given for a dose. At no time during the treatment did the dose of the acid exceed six minims per diem. He also records a case of puerperal eclampsia occurring before parturition due to uræmic poisoning, which he also treated successfully with carbolic acid.—*Lyon Médical*, vol. xxi. p. 10.

Dr H. Fischer of Breslau administers carbolic acid to diabetic subjects before surgical operations. The carbolic acid treatment in diabetes was first recommended by Ebstein and Müller. Fischer reports that if carbolic acid be given in small and frequently-repeated doses it will in a short time cause a considerable reduction in the amount of sugar in the urine, and permit the surgeon to operate with the ordinary chances of success. The use of the carbolic acid should be kept up during the after-treatment, and not be discontinued until the wound be quite closed.—*Deutsche Med. Wochenschrift*, No. 14, 1876.

GOA POWDER AND CHRYSOPHANIC ACID IN THE TREATMENT OF CERTAIN SKIN DISEASES.—In the *British Medical Journal*, 23d December 1876, Mr Balmanno Squire has a note on the treatment of psoriasis by chrysophanic acid. He employs the drug in the form of an ointment of the strength of two drachms of the acid to an ounce of lard; he has found it to act effectively and speedily. In the same *Journal*, 27th January 1877, he states that chrysophanic acid, which exists in Goa powder to the extent of 85 per cent., has also been separated from the medicinal rhubarb root, of which it forms $2\frac{1}{2}$ per cent., and it has also been found in dock-root. In a communication from Mr E. M. Holmes, the Curator of the Museum of the Pharmaceutical Society (*Brit. Med. Jl.*, 3d Feb. 1877), he points out that chrysophanic acid is contained in true senna leaves.

Mr Squire concludes from his observations, that chrysophanic acid is a parasiticide, and that as such it acts as a remedial agent in true ringworm. He claims (*Brit. Med. Jl.*, 17th Feb.) as advantages of the acid over Goa powder that its chemical composition is definitely known, and that the ointment of it is a cleanly application. Mr Postans, F.C.S., states (*Brit. Med. Jl.*, 24th Feb.) that the best method of making the ointment is to dissolve the acid in hot fat, which should then be transferred to a mortar and rubbed down till cold. To each ounce of ointment so prepared two drops of otto of roses may be added.

In the *British Medical Journal*, 28th April, Dr A. D. Keith records the speedy cure of a severe case of psoriasis which had resisted all treatment by inunction of an ointment consisting of ninety grains of Goa powder to the ounce of lard.

PHYSIOLOGICAL ACTION AND THERAPEUTIC USES OF ALCOHOL.—Dr Felton undertook the investigation of the effect of alcohol on animal temperature with a view to test the accuracy of the opinion of Liebig, who considers that alcohol increases the temperature, and that of Richardson who asserts that it lessens it. Dr Felton concludes from his experiments that alcohol first reduces the normal temperature and then raises it. When repeated its immediate tendency is to check an increase of temperature, but after a little while a rise usually follows, and is proportionate to the amount of alcohol injected. In febrile conditions it temporarily diminishes temperature, and is disposed to prevent increase of fever. In collapse it does not further lower, but raises the temperature to normal, and beyond it if too frequently repeated; therefore we ought to be governed by the thermometer in the administration of alcohol in such cases. In brief, the tendency of alcohol is first to depress and then elevate the previously normal temperature, and to correct an abnormal temperature.—*New York Medical Record*, Sept. 9, 1876.

Professor Binz thus sums up his views concerning the use of alcohol in medicine:—1. Alcohol is very frequently a stimulant of transitory power. 2. In relatively large doses it can serve as a

vigorous antipyretic. 3. Given in small and oft-repeated doses it is a food particularly adapted to cases where the stomach can take in no other combustible material to supply warmth and working energy to the organism. Professor Binz considers the use of alcohol in health as entirely superfluous.—*Practitioner*, May 1876.

The therapeutical use of alcohol was the subject of discussion at the Congress of Medical Sciences at Brussels in 1875. Dr Desquin distinguished the physiological action of alcohol into two phases: the first being characterized by excitement of all parts of the nervous system, and the second by depression of all the functions of organic and animal life. The excitant action is requisite in cases where there is great depression of the nervous system, as in some low fevers, and in malignant pneumonia; but alcohol is contraindicated in simple feverish diseases. M. Crocq denounced the use of alcohol in typhoid fever, and stated that he only gave it in pneumonia, when there was commencing paresis of the heart due to fatty degeneration. Dujardin-Beaumetz and Dr Lemola advocated the use of alcohol in acute inflammations, and the former quoted the experiments of Anstie, Dupré, and Riegel, which prove that alcohol lessens the temperature, and diminishes the amount of urea excreted, and that of the carbonic acid exhaled.—Quoted in *British and Foreign Med. Chir. Review*, April 1876.

In a leading article in the *British Medical Journal*, Feb. 10, on the relation of alcohol to medicine, the writer thus summarises the conclusions to be drawn from the evidence adduced at the Conference held at Oxford, under the presidency of Dr Acland:—

1. Alcohol acts by paralyzing the vaso-motor system of nerves. This paralysis is directly proportional to the quantity administered, and inversely as the stability of the nervous equilibrium of the individual. Stability of nervous equilibrium or *resistance* resolves itself into the individual and family history, and might be precisely statable if we had any means of measuring the quantity of *neurility* in any portion of the nervous system.

2. Alcohol exhibits a phenomenal contrariety as regards the action of small and large doses—small doses exciting, while large ones depress. In this respect, alcohol only conforms to the general law followed by stimulants and narcotics.

3. Alcohol is not necessary for persons in health, and, in fact, the hardest work possible has been done by human beings without its use.

4. Alcohol lowers the temperature, probably not directly, but by exposing a larger quantity of blood than natural to the action of the heat-abstracting outer air.

5. From the foregoing it follows that, in disease, alcohol will do harm in the early febrile stages of the pyretic disorders; but it will prove useful in the subsequent spanæmia and depressed stages; and, in fact, this appears to be the case.

6. It follows, therefore, that the wise physician, while he will

dissuade his patients from having recourse to the use of alcohol in health, and from habitually using it in any circumstances, will still employ, so far as he can for good, one of the most powerful remedies with whose properties modern science has made him acquainted.

In communications in the same Journal, Feb. 24 and March 31, D. Edward T. Tibbits questions the accuracy of these views. He considers that alcohol is consumed as a fat within the body, that hence it is a food, and as such is valuable in fever during the greatest elevation of temperature and the most marked acceleration of pulse. He thinks that it is more than doubtful that alcohol paralyzes the vaso-motor system in acute disease, for, in pneumonia, for instance, when judiciously administered, the pulse is reduced in frequency, the temperature falls, the tongue becomes moist, and sometimes even delirium disappears.

Dr Tibbits objects to the administration of alcohol in the spanæmic stage of fever, on the grounds that, as a rule, plenty of other nourishment can be taken, and there is a danger of the patient acquiring a relish for alcoholic beverages.

On the 20th Dec. 1876, Dr Lauder Brunton read before the Medical Society of London a valuable paper on the physiological action of alcohol. The following brief resumé is taken from the *Lancet*, Jan. 8th:—Alcohol in small doses increases the secretion of the gastric juice and the movements of the stomach, thus aiding digestion. Although unnecessary in health, it is useful in exhaustion and debility; it increases the force and frequency of the pulse by acting reflexly through the nerves of the stomach. In large doses it impairs digestion by precipitating pepsin, and over-irritating the stomach, and may produce death reflexly by shock. After absorption in the blood it lessens the oxidizing power of the red blood corpuscles, this property rendering it useful in reducing temperature. When constantly or very frequently present in the blood, it causes accumulation of fat or fatty degeneration of organs; it undergoes combustion in the body, maintains or increases the body-weight, and prolongs life on an insufficient diet, being therefore entitled to be reckoned as a food; if large doses be taken, part of it is excreted unchanged. It dilates the blood-vessels, increases the force and frequency of the heart's action, imparts a feeling of comfort, and facilitates bodily or mental labour, not by giving additional strength, but by enabling a man to draw upon his reserve energy, thus giving assistance in a single effort, but not in prolonged exertion. The same is the case with the heart; but in disease alcohol frequently slows instead of quickening this organ, and by so doing economises instead of expending its reserve energy. By dilating the vessels of the skin alcohol warms the surface at the expense of the internal organs; therefore it is injurious when taken during exposure to cold, but beneficial when taken after the exposure is over, as it tends to prevent congestion of internal organs.

The symptoms of intoxication are due to paralysis of the venous system, the cerebrum and cerebellum being first affected, then the cord, and lastly the medulla-oblongata. The apparent immunity which drunken men enjoy from the usual effects of serious accidents is due to paralysis of the nervous mechanism, through which shock would be produced in the sober condition.

A summary of the discussion which followed the reading of the paper is given in the *Lancet*, Jan. 8th and 29th.

MM. Dujardin-Beaumetz and Audigé have studied the physiological action of the following alcohols:—Ethylic (C_2H_6O), propylic (C_3H_8O), butylic ($C_4H_{10}O$), and amyllic ($C_5H_{12}O$).

From their experiments they draw the following conclusions:—

1. The toxic properties of the series of fermentation alcohols bear a mathematical relation, so to speak, towards their atomic composition. The higher this is, the more decided is the poisonous action, whether administered by the skin or mouth.

2. For the same alcohol the toxic action is more considerable when it is introduced by the stomach than by the skin. In the latter case, dilution of the alcohol in a foreign vehicle augments its poisonous properties.

3. Except in degree of intensity, the toxic phenomena appear to be in general the same whatever be the alcohol employed.—*Jl. de Pharm. et de Chimie*, quoted in *Dublin Jl. of Med. Sci.*, April 1876.

NITRITE OF AMYL IN MELANCHOLIA.—Dr J. B. Verga found a temporary improvement occasionally to follow the inhalation of nitrite of amyl in even the worst cases of melancholia and melancholia with stupor; but although the treatment was continued for periods varying from 15 to 73 days, no permanent good ever resulted.—*Journal of Mental Science*, Jan. 1877.

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Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I. — *On the Nature and Mechanism of Spontaneous Rupture of the Uterus in its Cervical Portion.* By ANGUS MACDONALD, M.D., F.R.C.P.E., Lecturer on Midwifery and the Diseases of Women and Children, Medical School, Edinburgh.

(Read before the Obstetrical Society of Edinburgh, 11th July 1877.)

Now nearly six years ago I received the accompanying uterus and notes from my friend Dr Philip Hair of Carlisle. The specimen and the notes were accompanied among other things with the expression, that Dr Hair hoped I would be able to throw some light upon the causation of this rupture, and that the preparation might be a useful addition to my museum. It was carefully laid aside as a valuable specimen—the unfortunate fate of very much excellent material, that had far better be cut up and described—but I did not at that time feel competent to explain the mechanism of the rupture.

But many things have happened since 1871; and among other evidences of progress in the department of scientific midwifery, our knowledge of the nature and causation of rupture of the uterus stands forth as a bold headland in the line of advancement.

The consequence is that we are in a position to answer such a query as was put to me by Dr Hair in 1871 without any hesitation, and manifestly not in the manner in which, to judge from his brief note, he himself expected it ought to be, and would be, answered.

In January of this year, a patient died after a long labour, eventually terminated by me by craniotomy, of whose body we obtained leave to make a section, and whose pelvis I am now able to lay before you. As in her case also we found evidence of cervical rupture, it appeared to me that the two cases might profitably be made the subject of a communication to this Society.

If I am able in the sequel, as I am persuaded is the case, to show that rupture of the uterus, at least in the cervical segment of the organ, the only situation in which it is likely to occur, instead of being of the nature of an accident which one cannot be expected to foresee—or, to put it strongly, instead of being a sort of visitation of Providence, is due to the mutual action of certain conditions and forces, which one ought with ordinary care to be able to detect long before rupture takes place, and therefore to be able to prevent the occurrence of uterine tear, a sufficient justification will, I feel convinced, have been made for my temerity in taking up the time of the Society with this subject for a little.

With these preliminary remarks, I proceed to record the cases with all possible brevity, giving the first in Dr Hair's own words, supplemented by a slightly more detailed account of the condition of the cervix as it is now laid before you, after years of preservation in spirit.

I wish also to draw your attention to the pelvis found in Dr Hair's case. It presents us with a very well-marked specimen of the flattened pelvis of a somewhat high degree, though not extreme. As is usually the case in such pelves, the transverse diameter, though quite large enough relatively, is decidedly shorter than it ought to have been had the pelvis been normal.

I wish further to direct your attention to the statement made by Dr Hair regarding the pressure of the child's head as a cause of rupture, and also to there being a large tubercle upon the left pubic ramus. Dr Hair does not say whether it involved the transverse or descending ramus. These causes, I shall show further on, I regard as quite secondary, if they indeed took any part in bringing about the lesion. The following is Dr Hair's report:—

CASE I.—*Prolonged Severe Labour in Narrow Flat Pelvis. Version. Death 1½ hours afterwards. Rupture of Uterus found on sectio.*

Elizabeth Owens, æt. 35, Carlisle, Thursday, 28th September 1871. I was three times called to Dr Sullivan's assistance on account of his not being able to deliver this woman, who had been in labour since the Sunday at midday previously—96 hours. Dr Sullivan was called on the Thursday at 11 A.M., a midwife having been in more or less constant attendance since Sunday. Dr Sullivan said he found the vertex presenting, but in an unfavourable position. There were no labour-pains during this time. The promontory of the sacrum was very projecting. He tried to restore the head to a more favourable position, and then put on forceps, but after locking these was unable to deliver the patient; in a second and third attempt he failed. He now attempted to turn, and passed up his hand for that purpose. After considerable difficulty he was able

to seize a foot and bring it into the cavity of the pelvis, but could not effect version. Having thus failed, he sent for me. It was now 3 P.M. There was no labour-pain. I found the right foot in the pelvis. The head was tightly jammed in the brim, and immovable in the second position, the occiput more depressed and more to the linea iliopectinea. Higher up still could be felt what I supposed was an elbow. I tried to effect delivery by the forceps, could fix them and use a little force, but they did not take hold of the head sufficiently far forward. I then determined to bring down the foot. I may say that the patient was never put under chloroform until I examined her. When under the anæsthetic I was able to seize the left foot, and then pushed the hand up to the right side. Turning was now easy. The difficulty in delivery arose when I had to get the head to engage in the pelvic brim. I at last got my fingers into the mouth, and by depressing the chin of the fœtus effected delivery about thirty minutes after I arrived.

During the whole morning she had been sick, and vomited several times. She never rallied after delivery, and had a cold clammy sweat all over her. The pulse, which was very small, became now more and more imperceptible, and at last could not be felt at all. The placenta came away without trouble. There was no hæmorrhage. Stimulants, ammonia, and bark, were administered, yet the patient died exhausted $1\frac{1}{2}$ hours after the delivery.

Post-mortem, 22 hours after death, 29th Sept. 1871. Present, Drs Elliot, Sullivan, and Hair. Rigor mortis well marked. Incision made from umbilicus to pubis. The abdominal wall contained a thin layer of fat. In the cavity of the abdomen was found 3-4 ounces of serum and some blood-colour. The peritoneum (parietal and visceral) as far as the umbilicus was much congested and dark coloured, some parts so dark as to look like gangrene of long standing; other portions were of a more recent appearance. Uterus anteriorly and inferiorly very dark coloured, softened, and the detached contiguous surfaces were rigid and vascular.

There was a deficiency in the uterine wall sufficiently large to admit the whole hand. The separated part corresponded to the posterior aspect of the bladder. The detached portion of the uterus was separated all round. This flap had been separated during life as the result of pressure by the child's head—in fact, mortification or sloughing had set in. The subperitoneal wall was almost as if it had been pounded like a jelly, having dark grumous blood extensively diffused through it.

The promontory of the sacrum projected very far forwards; also the left pubic ramus had a large tubercle upon its inner surface, close to the symphysis. The measurements of the pelvis were as follows:—

Antero-posterior diameter of the brim,	.	.	.	3 inches.
Transverse diameter,	.	.	.	$4\frac{5}{8}$ „

The child's head presented the following dimensions:—

Biparietal diameter,	$3\frac{5}{8}$ inches.
Occipito frontal,	$4\frac{1}{2}$ „
Occipito parietal,	$5\frac{3}{8}$ „

In regard to this uterus, we notice that the tear passes transversely across the cervix, throughout nearly one-half of its lower third anteriorly. This is joined near the left edge of the cervix by a longitudinal rent which passes up to, but does not involve, the body of the organ. The perpendicular tear intersects the transverse three-fourths of an inch to the right of the extreme left extremity of the cervix. It does not cross the circular tear. It is observed that the cervical portion of the uterus is much elongated and thinned, contrasting very markedly with the thickened body and fundus. Even when shrunk by being long kept in spirit, the longitudinal measurement of the cervix, anteriorly along the line of rent, amounts to about 4 inches, and posteriorly to $2\frac{1}{2}$ inches. It is also to be noted that the vaginal portion of the cervix is still persistent to the right and posteriorly as a tolerably thick projecting fringe varying in depth from three-fourths to one-fourth of an inch, but along one-fourth of its circumference, being the left anterior quadrant, it has almost entirely disappeared, this corresponding inferiorly to the left half of the rent. The section along the thickest, that is upper, part of the torn surface, measures one-eighth of an inch, and along the lower portion is in many parts reduced to little more than the thickness of paper. The anterior wall in the body and fundus, again, is seen to measure fully half an inch in thickness, seems quite healthy in consistence, and contrasts very markedly with the thinned and membranous cervix.

It would thus appear that at the time this uterus ruptured the cervical portion was stretched and thinned, its left and anterior portion much more so, however, than its right and posterior, and seeing that the anterior wall of the cervix, after so long drying, measures fully four inches, it must have been distended to five or six inches at least at the moment of rupture.

But I now proceed to record the second case.

CASE II.—Prolonged Severe Labour in Small Pseudo-malacosteon Pelvis. Craniotomy. Death after 36 hours. Rupture of Uterus found on sectio.

C. W., æt. 27, unmarried, and residing at 47 C. St., expected to be confined of her first child in December 1876, and with that view engaged the services of Mr George Harrison, a former dispensary pupil of mine.

It would appear that, at the age of 16, she was under the care of the late Professor Sir James Simpson, and was then made to lie on her back for six months.

There could not be elicited from the inquiries made any history of disease of the spine to account for this treatment, nor was it possible to deduce facts sufficient to establish the existence of rickets at any period of the patient's history, though from her smallness of stature one felt inclined to believe that such condition must have existed at some time. In the month of November, Mr Harrison and Dr Playfair (with whom Mr Harrison was an out-door dispensary pupil at this time) examined the patient with the following results:—

Length of body, 4 ft. 5 inches.

External pelvic measurements—

External conjugate, $7\frac{1}{2}$ „

From one anterior superior iliac spine

to another, $9\frac{1}{8}$ „

From iliac crest to crest, $9\frac{3}{4}$ „

An internal examination was also made at the time, but Dr Playfair did not come to the conclusion that there existed a high degree of contraction. The perinaeum, however, was extremely resistant, so that considerable difficulty was offered to making an accurate exploration of the pelvis internally. On Monday 8th January 1877 C. W. fell in labour, and sent for Mr Harrison. He found that she had been complaining of abdominal pains since 3 A.M. of that morning. Her pulse was 68, her bowels constipated. Mr H. could not make out any presenting part. She continued in that state the whole of that day, sleeping occasionally for short periods.

On Tuesday 9th she remained much the same. The waters were said to have been ruptured that day at 10.15 A.M. Pulse was still the same. Mr H. made out no presenting part. He ordered nutriment, and gave 30 drops of laudanum at night, which was followed by sleep from 11 P.M. to 3 A.M.

Wednesday 10th.—Patient vomiting frequently. Pains much same. Pulse 120. Patient had several doses of castor-oil, which were rejected. Matters were allowed to go on in this way by Mr Harrison for the remainder of the week, only that he gave a soap-and-water enema on the 11th (Thursday), by which the lower bowel was emptied.

It was not till Saturday morning that Mr Harrison could feel any presentation. He then found it was a head.

He meanwhile laboured under the delusion that the pains of labour had never become established, and that the abdominal pain was chiefly due to derangement of the bowels. In this view he was supported by the friends, who, not observing the ordinary down-bearing pains, fancied the poor woman was never ill. On Saturday he called at the dispensary and saw Dr Playfair, managing to convey to him the idea that the patient was merely now beginning to be really ill, but that there was no immediate urgency to attend to the case. He saw C. W. on Sunday the 15th at 12 o'clock noon, and finding her in a serious condition at once communicated

with me. I collected craniotomy and other instruments, and reached the patient's house at 1.30 P.M., finding her condition as follows:—

Patient suffering from constant vomiting. Pulse 150, weak and irregular. Vaginal discharge fearfully stinking, so much so that I dared not examine the patient per vaginam until I had sent for some carbolic oil in which to soak my hands.

The abdominal tumour is *specially* elongated, and reaches up *specially* high towards the ensiform cartilage. On palpation a peculiar crackling or crepitating sound is elicited over an area of about six inches square, commencing about two inches above the umbilicus and passing downwards. On observation friction could be heard in the peritoneal cavity, but no foetal heart sound. The abdomen on pressure felt tender, more especially on the right side. Above the upper edge of the tumour was an oval semi-resonant swelling, which appeared to be either the stomach or a portion of the colon, tensely filled with air. Temperature, $98^{\circ}\cdot4$ per vaginam. Discharge foetid. The posterior wall of the pelvis very markedly pushed forwards and downwards towards its upper part, so as to narrow not only the inlet, but the cavity over a surface of at least two inches in depth of the back wall. Below this projection the back wall of the pelvis was very markedly retracted. The pelvis in other respects seemed altogether small, shallow, and contracted even down to the very outlet. The head presented at the inlet with the occiput to the left and anteriorly. The presenting part was obscured by a very large caput succedaneum. But it had not engaged in the brim, being still freely movable over it. The catheter was passed, and about a tablespoonful of bloody urine withdrawn.

I now at once proceeded to perforate, which was easily effected through the anteriorly placed portion of the right parietal bone. The head rapidly collapsed, with free escape of the cerebral contents, so that I found no use of a cephalotribe, which I had brought with me. I however experienced great difficulty in bringing down the head, as the bones would not bear the necessary traction. After breaking down the greater part of the calvarium by bone forceps, I got the chin tilted down, and ultimately was able to get traction effected upon the neck, and thus to effect delivery of the body of the child.

The expulsion of the child was followed by a gush of stinking water and abominably putrid gases.

There was no bleeding, although I noticed that the uterus remained high up in the abdomen, and was apparently, though we afterwards discovered not really, ill contracted. The error in observation arose from the fact that the body and fundus contracted powerfully, and separated and expelled the placenta into the cervical portion of the organ, which had lost all power of contraction. The crepitation in the anterior aspect of the abdomen could still be felt.

Slight traction on the cord was sufficient to remove the placenta, and the vagina was now well washed out with water by means of a Higginson's syringe.

We now became aware that the actual amount of pelvic contraction was much greater than we had believed it to be before operation.

Owing to the contracted condition of the outlet, it was impossible to get the whole hand into the pelvic cavity. But so far as we could introduce the hand, we found that nowhere could we get three fingers abreast into it. It now appears that we never could reach the conjugate diameter on account of the narrowing at the outlet.

The diagonal conjugate measured $3\frac{1}{2}$ inches.

The symphysis felt thick, and gave us the impression that we ought to subtract about $\frac{3}{4}$ ths of an inch, and we accordingly came to the conclusion that the conjugate must measure about $2\frac{3}{4}$ inches.

From the lower edge of the symphysis to the lower portion of the bulge in the back wall of the pelvis we made the distance 3 inches.

The pelvis was noticed to be contracted laterally, but it was further observed that the sacrum was markedly carried backwards at its middle third, and again bent forwards at its lower portion, the coccyx following the line of the lower portion of it.

The operation lasted 40 minutes, and after its completion the pulse was found to be 156. R. 34.

At 3 P.M. the pulse had fallen to 126; but the respiration had risen to 30.

At 4 P.M. pulse 132. Resp. 30. Patient had a wineglassful of milk with lime-water, which she kept tolerably well.

At 9 P.M. pulse 132, feeble and now regular. She complained of severe pain in the right side of the abdomen from the level of the false ribs to the iliac region. Abdomen becoming tympanitic. Turpentine cloths to be applied, and 30 minims of laudanum to be given. I saw her myself at 11 P.M., and found her much as stated by Mr Harrison at 9.

15th January.—At 9 A.M. pulse 130; temperature, 57° ; respiration, 37. Has slept tolerably well over night. Abdomen very painful and tender.

At 10.30 Dr Playfair saw her, and found her as stated above, and besides noticed a somewhat doughy mass in the tender area, extending from below the ribs towards the pelvis on the right side. On light percussion this mass gave a dull note, but on deeper percussion a resonant one. No crepitation to be made out over the abdomen. Discharge not foetid, small in quantity. Mucous membrane of the vagina looks extremely dark in colour, and almost gangrenous. It was washed out with a solution of carbolic acid. The catheter was passed, and a teaspoonful of bloody alkaline urine removed.

At 12 noon the patient became delirious, and at 11.55 P.M. she died.

The child, independently of its loss of brain substance, calvarium,

etc., weighed five pounds, so that we judged it must have weighed at least six pounds when entire.

A post-mortem examination was permitted, and was made by Dr Wyllie forty-six hours after death.

The following were the main facts elicited:—

Abdomen greatly distended, and on opening this cavity the bowels were found to be very much inflated with gas, which distended enormously the large and small intestines, and also the stomach. Surface of the bowels somewhat congested. Peritonæum coated lightly with recent lymph. The uterus was *obliquely* situated with the fundus in the left iliac region. It measured 7 inches in length by $4\frac{1}{2}$ inches in breadth. In the upper four inches of its length the surface was smooth, and its substance quite firm. In the lower three inches, however, the peritoneal lining was raised up in the form of a large loose bleb, of a dark purplish-blue colour, and filled with gas. At the lower part of this bleb, close to the anterior utero-vesical reflexion of the peritonæum, there was a circular patch $1\frac{1}{2}$ inches in diameter, covered with a thickish layer of recent lymph.

On removing the uterus with bladder and vagina attached, and laying it open by an incision traversing its whole length longitudinally, it was noticed that the placenta had been attached to the anterior wall. The area of its original attachment was round in shape, 5 inches in diameter, and covered with small adherent clots. The walls of the fundus, as also the internal aspect of the body of the uterus, which had not been covered with the placenta, were healthy. The muscular tissue was extremely thick ($1\frac{1}{2}$ inches), pale, and quite healthy looking.

But the whole of the *cervical portion* of the uterus was very much ragged, torn, gangrenous, and quite *thin* and *membranous* in section. In its anterior wall there was a large tear about three inches in diameter, through which the finger could be passed into the sub-peritoneal bleb above described. The only lesion observable lower down was an oval opening about three-fourths of an inch in diameter in its largest axis, which was situated transversely in the upper anterior third of the vagina, involving the structures of the bladder, so that vesico-vaginal fistula was established. It was not clear, however, whether this opening was not due to the removal of the tissues, or existed antecedently to the post-mortem.

We were able to secure the pelvis, which is now laid before you, and which presented the following dimensions, which were carefully taken by Mr Rumney Illingworth:—

<i>Brim.</i>		<i>Outlet.</i>	
Conjugate, .	3 inches.	Conjugate, .	$3\frac{1}{\pi}$ inches.
Transverse, .	$4\frac{9}{16}$ "	Transverse, .	$2\frac{1}{16}$ "
Right oblique, .	$4\frac{3}{8}$ "	Right oblique, .	$3\frac{1}{8}$ "
Left oblique, .	$4\frac{3}{16}$ "	Left oblique, .	3 "
Circumference, .	$14\frac{5}{8}$ "	Circumference, .	$12\frac{1}{2}$ "

On inspection, it will be evident to the Fellows of the Society that the pelvis presents a very well marked example of the pseudomalacosteon rickety pelvis. We have, for example, an approximation to the stellate form of the inlet, a tolerably well-marked beaked promontory, descent of and rotation forwards of the upper part of the sacrum, permitting downwards and forwards displacement of the lower lumbar vertebræ, so that the junction of the bodies of the fourth and fifth lumbar vertebræ is nearly in the plane of the inlet, that is, in the position where the promontory of the sacrum ought to have been. The sacrum is also acutely bent at the junction of its second with its middle piece, the anterior and posterior surfaces of the remaining portion of that bone and of the whole of the coccyx being thus made to look nearly upwards and downwards respectively. By this condition of the sacrum, combined with narrowness of the sub-pubic arch, the outlet is extremely contracted. The effect of the oblique pull of the ilio-sacral and ilio-lumbar ligaments is well exhibited in the inward flexure, which it has produced in the posterior third of the iliac bones, which are thus made to assume a tolerably well-marked shovel shape. The true nature, however, of the disease is seen in the weight of the pelvis, and in its generally stunted appearance. The beak deformity deprives the antero-posterior diameter of about five-eighths of an inch of its actual dimensions, making the pelvis practically one of barely $2\frac{1}{2}$ inches. The real conjugate at the true brim is $3\frac{3}{8}$ inches, while the available conjugate is 3 inches.

With the view of ascertaining what changes, if any, in dimensions take place in the pelvis, as the result of maceration and drying, on the suggestion of Dr Matthews Duncan, Mr Illingworth fixed for me the exact points from which his original measurements were taken in the fresh pelvis, by means of driving pins into the bone. Measurements were again made after maceration and drying with the following results:—

<i>Brim—</i>		<i>After maceration.</i>	
	<i>Before maceration.</i>		
	Conjugate, . 3 inches.	Conjugate, . 3 inches.	
	Transverse, . $4\frac{9}{16}$ „	Transverse, . $4\frac{1}{4}$ „	
	Right oblique, $4\frac{3}{8}$ „	Right oblique, $4\frac{3}{16}$ „	
	Left oblique, $4\frac{3}{16}$ „	Left oblique, $4\frac{1}{16}$ „	
<i>Outlet—</i>			
	Antero-posterior, $3\frac{1}{8}$ inches.	Antero-posterior, $2\frac{1}{8}$ inches.	
	Transverse, . $2\frac{1}{8}$ „	Transverse, . $3\frac{1}{8}$ „	
	Right oblique, $3\frac{1}{8}$ „	Right oblique, $3\frac{1}{4}$ „	
	Left oblique, . 3 „	Left oblique, . $3\frac{1}{8}$ „	
<i>Circumference at the brim—</i> Before maceration, $14\frac{3}{8}$ inches ; after maceration, $14\frac{1}{8}$ inches.			

It will thus appear that at the brim there is no appreciable change in the conjugate diameter, whilst there is unmistakable diminution of the transverse, as also some, though not so great, in both oblique diameters. There is contraction at the outlet as a result of drying

and maceration in the antero-posterior, but both oblique and transverse diameters are greater than in the fresh pelvis. It appears to me that these results tend to show that this appreciable diminution in the lateral and oblique capacities of the pelvis at the brim are referable to drying and shrinking of the cartilaginous structures connecting the bones of the pelvis to one another anteriorly and posteriorly, but that the osseous tissues do not contract to such an amount as can be made evident by measurements. The widening in the transverse and oblique directions, which would appear from the measurements to have taken place at the outlet, seem to me to be due to the loss of the fibro-cartilaginous tissues covering the inner aspects of the ischial tuberosities, and the spines of the ischium, as also to breaking off of the extreme points of the latter osseous projections. How to explain the slight contraction in the anterior dimension of the pelvic outlet, I confess myself at a loss, except it may have arisen from change of curvature in the coccyx, through drying of its cartilaginous attachments.

The cases that we have been considering present us with instructive examples of rupture of the uterus in its cervical portion, and accordingly I shall follow them with a few remarks upon the subject generally.

Thanks to the labours of many obstetricians, among whom, however, Braune,¹ Bandl,² and Litzmann,³ deserve to be singled out specially for their recent contributions to the physiology and pathology of the cervix during parturition, we are now in a position to explain with tolerable certainty the mechanism by which this accident arises. That being so, we are a long way on the road to establish a rational prophylaxis, and thus in a considerable proportion of cases to be able to prevent and avoid its occurrence.

Indeed, the removal of rupture of the uterus out of the region of utter uncertainty in which it has been wont to hover hitherto is a most valuable step in the progress of recent obstetrics.

For, as rupture of the cervical portion forms nearly the whole of the cases of uterine rupture, seeing that both experiment and clinical observation agree in leading us to the conviction that spontaneous rupture of the body or fundus is impossible if the uterine tissue is healthy, if we have fully mastered the mechanism by which cervical rupture is brought about, we have been able to explain the great bulk of all cases of uterine rupture. Likewise, if we can anticipate and prevent the great bulk of cervical tears, we can anticipate and prevent most ruptures of the uterus.

Let me, therefore, try to place before you the present state of our knowledge of the ordinary process by which this terrible accident arises.

¹ *Homolographic Sections*. Leipzig, 1872.

² *Ueber Ruptur der Gebärmütter und Ihre Mechanik*. Wien, 1875.

³ *Das Verhalten des Cervix Uteri unter der Geburt*, *Archiv für Gynäkologie*. Bd. x. s. 410.

From a glance at Braune's lithograph of his famous homolographic section now laid before you, the very great amount of distension and thinning to which the cervix uteri is subjected during an ordinary labour is made abundantly evident.

It is there shown that the cervix of the latter months of pregnancy, whose cavity before dilatation has a variable but inconsiderable transverse diameter, and a longitudinal measurement of $1\frac{1}{2}$ to 2 inches, is converted, during the preliminary uterine contractions that precede ordinary labour-pains and during the operation of the period of the first stage of labour, into a tube, whose length is not less than $4\frac{1}{2}$ inches, and whose transverse diameter is as great as its length.

It requires no argumentation to prove that such a result can only be brought about by coincident thinning and stretching of the cervical tissues, and must inevitably be accompanied by weakening of the uterine walls in its cervical portion. The cervical segment of the dilated genital passage must therefore be regarded as in itself a weak section of the canal. This distension and thinning of the cervix is brought about by the action of the uterus in its twofold manner, as pointed out by Luschka. That double action is—

1st, The power which the uterus has to propel its contents forwards.

2d, The power which it possesses to retract itself over its own contents.

The first of these effects is chiefly due to the contraction of the outer layers of longitudinal muscular fibres which surround the organ as with a hood, and diverge from it laterally and anteriorly towards the sides of the pelvis into the folds of the broad ligaments and into the round ligaments. The second effect, again, is due especially to the result of the contraction of the middle and internal layers of uterine muscles by which the walls of the uterus are thickened and shortened in all directions.

When the mutual relations of all the parts concerned are normal, the distension of the cervical canal so as to form a segment of the distended genital passage, and the advance of the foetal head to occupy that segment, and to thus pass into and through the pelvis, follow a law of parallelism, or take place simultaneously.

But if from any cause the outer os is not dilated in proportion to the rest of the cervix, or if, although it be dilated more or less completely, the retraction of the outer os over the child's head is prevented in consequence of the cervix being caught and impacted between the head of the foetus and the inlet of a tight pelvis, then, as shown abundantly by Bandl and by Litzmann, the cervix being subjected to the prolonged action of the pull of the powerful uterine muscles, is liable to be distended to a dangerous amount.

The rate at which this over-distension proceeds, and the risks that may be expected to follow in its train, depend greatly upon

the degree of pelvic contraction, the strength of the broad and round ligaments, and the tension of the abdominal muscles, including, of course, the diaphragm.

A moderate degree of pelvic contraction, and along with it the condition of multiparity, favour such an accident, for it is only in cases where the pelvic contraction is not too great to allow the head to partially enter the brim, that the cervix can get wedged in between the head and the pelvis, whilst also a patient whose uterine pelvic attachments have been severely put to the test in a former difficult labour, is more likely to suffer from the injurious effects of over-distension of them than one who has never before been in labour, and whose uterine ligaments and whose abdominal walls have never previously suffered from the relaxing effects of over-distension.

Suppose, then, the abdominal walls are imperfect in their powers of resistance, and the uterine ligaments have on one or more occasions been severely stretched, then the accessory aids to the support of the cervix against injurious distension in the longitudinal direction are imperfect, and it is very especially liable to be torn.

On the other hand, a very high amount of pelvic contraction is really not so likely to end in spontaneous rupture as a moderate amount of it, as the head being in the former case unable to descend into the pelvis, cannot in that way maintain so readily that dangerous amount of distance between the superior and inferior limits of the cervical segment as when the pelvis allows the head to descend to a certain amount, and thus to carry before it the outer os uteri, as well as to fix the cervix between the head and the pelvis in the neighbourhood of the outer os.

It is thus apparent that the main factors in the production of cervical rupture are the yielding of the uterine pelvic attachments and weakened action of the abdominal muscles in the face of some obstruction to the onward advance of the ovum.

This obstruction may and does arise from very various causes. The principal among them are deformed pelvis, extreme rigidity of the outer os, obliquity of the uterus, so as to make the head project against the back wall of the pelvis, and thus spend its power in dilating and distending the cervix in its posterior aspect, the great bulk of a hydrocephalic head, or the existence of a transverse presentation.

In the two cases under consideration, this distension would appear to have taken place to such an extent as to induce gradual death of the tissues. It will be noticed that Dr Wyllie states that in the case of C. W. the cervix was reduced near the rupture to the condition of being thin and membranous, and it can also be seen in Dr Hair's case that the anterior wall is in some parts near the tear reduced to the thinness of parchment.

This thinning and elongation of the cervix is in head cases

accompanied by morbid elongation of the uterus, as was noticed and recorded in the case of C. W. This high position of the fundus is commonly combined with a marked amount of obliquity of the uterus in consequence of the one shoulder of the child being usually pushed more forwards into the weakened and dilated cervical segment than the other. I well remember still a case that fell under my observation in December 1870. The patient lived in the West Port, and was confined at the period referred to of her seventh child. Her previous labours had been natural. But in this case, besides having to deal with a very severe and difficult delivery, matters were complicated by partial placenta prævia. The bleeding, however, which was never serious, soon ceased altogether. But, though the pains were long and powerful, the head would not enter the brim. I tried forceps, but could not get the head to engage. I next attempted to turn, but, though it was by no means difficult to seize the feet, no power that could be exerted with safety to the mother could effect version. I then asked and received the able assistance of Dr Matthews Duncan, who made similar and equally unsuccessful efforts at delivery. At his suggestion I then perforated the head, when the delivery was speedily effected. The child was a specially large female. Careful examination after delivery led both Dr Duncan and myself to the conclusion that the patient's pelvis did not measure more than $3\frac{1}{2}$ at most in the conjugate of the brim. It was also noted at the time that the uterus was very markedly elongated, and that it presented a very pronounced example of right lateral obliquity. This case, I feel very sure now, was one of those threatened cases of rupture, with extremely distended cervix. The cervical zone had lost its contractility, whilst an elongated fundus and body still retained and grasped with tetanic energy the great mass of the trunk of the fœtus. Under such conditions, turning is apt to be extremely troublesome, and even, as pointed out by Bandl, to be so difficult to execute as to lead to dislocation of the child's limbs in ineffective efforts to complete it. The force of the operator is under such conditions brought to bear upon the brim of the pelvis and that side of the uterus which is least retracted upwards.

Bandl has pointed out that in ordinary circumstances, whilst the head is entering the cervix and distending the outer os, which may be deeply situated meanwhile in the true pelvis, the upper limit of the cervix can be made out just above the level of the pelvic brim.

But in those cases in which there exists over-distension of the cervical segment, its upper limit may be made out as high as within two or three finger-breadths below the umbilicus.

This limit may be made out as a transverse or more or less oblique furrow. This observation I have had opportunity to verify, but more especially on Sunday last, when I had to deliver instrumentally a primipara, of rather advanced years, of a child

whose head was far above the average size. Its diameters were—occipito-mental, 7 inches; occipito-frontal, 5 inches; bi-parietal, 4 inches; and bi-temporal, $3\frac{1}{2}$ inches. I observed that in this case the head was only able to enter the brim transversely, so that practically, though the conjugate measured after delivery 4 inches, the pelvis was abnormally small for the head. The first stage was long, and the pains remarkably powerful. Even before the membranes ruptured, I noticed a tendency in the cervix to over-distension, and after the waters had been discharged for some time I was able to demonstrate to Dr Playfair and the pupils who assisted me, that the upper edge of the distended cervix was situated fully a hand-breadth above the upper edge of the symphysis. I ought to remark that in this patient's case the outer os was abnormally rigid. We had, therefore, here the conjunction of two forces tending to favour over-distension of the cervix, viz., disproportion between the pelvis and the head, and rigidity of the outer os, not to speak of the actual over-distension which the very great size of the head itself would necessitate.

The line of separation between body and cervix is not the only distinction, however, nor is it the chief differentiating point. During the interval between the pains, the body and fundus feels thick and soft, making it difficult to recognise the parts of the child through the uterine wall, whereas in the cervical segment of the uterus the parts of the foetus feel in dangerous proximity to the examining hand. During a pain, again, the body and fundus feel hard, thick, and rigid, whilst the cervix feels tight and thin.

This extreme distension and thinning of the cervical segment of the genital passage under various conditions that tend to produce it in a specially marked manner, is well indicated in the drawings before you, which have been copied by me from Bandl's lithographs. I am satisfied that these drawings exaggerate the condition of matters considerably, but I am equally well satisfied that the exaggerations are in the right direction, and that Bandl's views are essentially correct.

At any rate, there is the best evidence before us to prove that in the case now under consideration there did exist a very abnormal amount of cervical distension before the rupture occurred. It is also worthy of notice that the rupture of the cervix occurred in both cases under conditions that were unfavourable for its production. We had in both cases a very considerable amount of pelvic contraction; and the patients were both primiparæ. This, no doubt, explains the very long continuation of labour in both cases before the tear took place.

There is no evidence that in either case there existed any perforating injury through pressure of any projecting part of the pelvis against the uterine wall. It appears that the projection in the left pubic ramus only acted as fixing down the left edge of

the cervix more firmly than usual, as at that point the vaginal portion of the cervix had all but disappeared.

The common belief that rupture of the over-acting body or fundus may result from a long-delayed labour, receives no support from the dissections in either of these cases. In fact, the post-mortem appearances flatly contradicted the assumption. Thus, the body and fundus in the uterus laid before you are seen to be healthy, though the cervix is much torn; and in the other case, though the cervix was torn to tatters, the body and fundus were found perfectly healthy. At the sectio Dr Wyllie remarked specially upon the healthy condition of the mucous membrane of the body of the uterus, and observed that it compared so very markedly with that of another uterus, which we had examined together a few days previously, in which the inner lining of the organ had assumed a somewhat diphtheritic character. These facts tend to establish more and more decidedly the result arrived at by Dr Duncan from actual experiment, viz., that spontaneous rupture of the healthy uterus in the body or fundus of the organ is, so far as can be judged, impossible.¹

The tear of the cervix in regard to its direction will of course vary in proportion to the causes that determine the lesion, and the direction of the fibres that first give way. From the fact that the pervading influence that determines the tear acts longitudinally upon the cervical segment of the uterus, it follows that the prevailing direction of such ruptures must be circular, that is, must arise at right angles to the direction of the traction which causes it.

But if, with the traction which the body of the uterus exerts upon its cervical segment, there is conjoined the propulsion of a specially large segment of the ovum into the cervical cavity—say in the case of a hydrocephalic head—then there may arise a transverse strain or distension of the cervical tissues that will produce a longitudinal tear.

Indeed in Dr Hair's case there was, and it is not uncommon to find it so, a compound tear, the two elements of which were nearly at right angles to one another.

There is another kind of cervical rupture that I have not as yet adverted to. I mean those cases in which the slight ruptures of the vaginal portion of the cervix, which happen probably without exception, in all first cases, pass too deeply, and involve the supra-vaginal portion of the distended cervix more or less seriously.

The mechanism of this kind of tear is extremely simple, and merely indicates severe transverse distension of the outer os, whether that arises spontaneously or is the result of operative interference.

There is still another form of rupture due to long-continued

¹ *Mechanism of Normal and Morbid Parturition*, p. 95. Edinburgh, 1875.

pressure of the cervix against a projecting portion of the pelvis. In that case the perforation is usually slight, but the uterine tissues for a considerable distance around are found to be seriously bruised and squashed up.

The conditions that give rise to this form of cervical lesion are: acute curvature of the sacral promontory with the child's head pressing against it under the influence, for a considerable time, of the contractions of an anteverted uterus.

From the above remarks it must, I think, be evident that rupture of the uterus follows as a result of clearly appreciable laws and forces, and is preceded by demonstrable premonitory signs, which, if taken into account in time, would form the basis for an appropriate preventive treatment. This, however, is beyond the scope of my present paper. But I hope to make the symptoms and treatment of this accident the subject of a future contribution to the Society.

ARTICLE II.—*On certain Manifestations of Gout, Rheumatism, and Rheumatoid Disease.* By J. A. MENZIES, M.D. Ed., F.R.C.S. Ed., Naples.

FROM the number of cases which have come under my notice in the last few years of patients who have been, or are, sufferers from certain forms of uterine disease, and the connexion which I think I can establish between them and rheumatism, gout, and rheumatoid disease, I am inclined to believe that the importance of heredity and diathesis in these complaints is either overlooked or underrated. Dr West has pointed out that there is a troublesome form of gouty dysmenorrhœa, and from what I have seen myself, the gouty, rheumatic, and rheumatoid diatheses are also frequently associated with metrorrhagia and menorrhagia. I need not allude to the well-known connexion between gout and asthma and bronchitis further than to say, that in female chronic bronchitic patients I have found that they have generally suffered from dysmenorrhœa, and that the bronchitis has become established after the cessation of the catamenia. On the other hand, those who have suffered from metrorrhagia seem to incline to articular disease at the same period. But this is a question which can only be settled satisfactorily by those who have had such patients under observation for considerable periods of time, and who can speak positively, not only as to the actual disease, but also as to the heredity.

Many of these patients accept their sufferings as a matter of course, and take no steps whatever to have them alleviated. In a case recently under my notice, a lady asked me to prescribe for a friend with whom she was travelling, telling me that she was so alarmed at her state that she could not exist longer without having

advice, although she knew that the step she was taking would certainly lead to a serious disagreement with her companion. And in very many other cases I have found the same carelessness or positive aversion to seeking advice. There is reason also to believe that some sufferers from dysmenorrhœa are treated for stricture of the cervix and flexions, to which latter, perhaps, undue importance is in some cases attached. If the cause of the dysmenorrhœa is mechanical, mechanical and surgical treatment will be of service, but only in this case.

Some of these patients are of a peculiar temperament. They are either in the most exuberant spirits, or in the deepest despondency. They seem hardly to know what the happy medium is. Others, from having found relief from their agony by the use of stimulants, have gradually acquired, if not actually, the habit of exceeding, at least, an inclination to indulge in more stimulant than is usually taken by ladies. And to this cause, and the peculiar temperament before mentioned, I am inclined to attribute a considerable portion of the excess in stimulants which we know is so prevalent at the present day in females of all ranks of life.

Generally, they are childless, or their children are very few. In some, as the disease progresses, miscarriages occur, and all sorts of reasons may be assigned as a cause. One cause of sterility is said to be an acid condition of the vaginal mucus, which it is only reasonable to suppose will be found in these patients. Another cause may be the condition described by Dr Macrae of Penicuik, in the January number of this Journal, and a third, a condition of chronic endometritis.

It is not unreasonable to suppose that the hyperacidity of the secretion may cause spasmodic stricture of the cervical canal, and also very great suffering, without stricture, in some cases. It is remarkable that several mineral springs, of undoubted efficacy in rheumatic and gouty cases, enjoy a reputation for the cure of sterility.

A few cases out of many which I have observed will show clearly enough the point which I am trying to establish. The first is interesting as showing the connexion with uterine disturbance, bronchitis, and arthritic disease. Unfortunately, I find no reference in my notes as to the state of the catamenia previous to cessation.

1. When a lady who had passed the critical period came first under my notice, I was told that she was suffering from phthisis. On examination, I found nothing that warranted the belief. There was a history of severe hæmoptysis, which, on investigation, I found had followed immediately after the sudden cessation of the catamenia, caused by a severe mental shock. There was severe pain localized about the outer third of the clavicle, and great flattening of that side of the chest as compared with the other. During my examination, I was struck with a creaking and grating sound,

which, on inquiry, I was told proceeded from the shoulder-joint, and I soon had proof that it could be heard a long way off. The joint had been painful and useless for a considerable time, which quite accounted for the flattening of the chest, owing to the waste of the pectoral muscles. Bronchitis was well-marked; and in addition, she suffered frequently from congestion of the kidneys. The pain was either sympathetic from the shoulder-joint, or from a periostitic inflammation of the part. Dry cupping and blistering had been freely employed, but had not done much beyond affording temporary relief. Iodide of potash, however, and cod-liver oil, ameliorated her condition; but it was far too late in her case to attempt anything like curative treatment. There was said to be heredity of gout and phthisis.

2. A married lady—no family—has a tendency to gravel, very bronchitic, suffered from dysmenorrhœa before the cessation of the catamenia.

3. A married lady, very rheumatic, and has had gravel; has had several miscarriages without apparent cause. Has three children alive, but appears to have an increasing tendency to miscarry as she grows older. Suffers much from bearing-down pains at times. I have treated her for endometritis depending on rheumatism, with marked benefit. Father very rheumatic.

4. A married woman, separated from her husband, very rheumatic; *pari passu*, with the increasing rheumatism, dysmenorrhœa appears.

5. A widow lady without children, formerly metrorrhagic. On cessation of the catamenia, suffered from arthritic disease of both knee-joints, the cartilages of which are now probably almost entirely absorbed.

6. A young lady, unmarried, very rheumatic, subject of occasional hysterical epilepsy, bronchitis, and metrorrhagia.

7. An American lady—had perpetual miscarriages, and during a period of ten years only menstruated once. Her adviser in America, by certain agents which I do not care to describe more particularly, effectually restored the secretion, and prevented conception. She had previously had children, some now living. Is a severe sufferer from chalky deposits in the hands, and cardiac affection. Heredity rheumatic.

8. A young lady, unmarried, was much disfigured by eczema of the face, which disappeared under treatment. Has since suffered from gravel, and is metrorrhagic. Had hip disease in childhood.

9. A lady, who suffered severely from dysmenorrhœa, told me that all the ladies of her family were similarly afflicted. She denied heredity of gout or rheumatism, but confessed to having had rheumatic pains in her wrist, and her knuckles were very much enlarged. She also suffered from irritable bladder.

10. A young married lady, dysmenorrhœic. After several years of marriage, no children. Gouty heredity.

11. A married lady, dysmenorrhœic. After several years of marriage, a still-born child.

12. Two ladies—aunt and niece. The former a widow, metrorrhagic and dysmenorrhœic, no children. Says that no member of her family ever escaped gout. Tendency to bronchitis. Niece metrorrhagic only.

I have on two occasions been called to see young ladies who were almost cyanotic in paroxysms of asthma. One of these was a dysmenorrhœic, with gouty heredity, and I was surprised to find that the only treatment for her asthma had been stramonium, or datura tatula cigarettes, and a cough mixture. As she was about twenty-six years of age, and had been subject to these attacks for about ten years, I am afraid that the disease had taken too strong a hold to be easily cured. The other case was in a rheumatic patient, who was about sixteen. She had had a few scanty periods with much suffering, and always accompanied by severe asthmatic attacks. Cough mixture, and hot gin, or whisky and water, had been considered sufficient treatment for her.

I cannot, unfortunately, offer any suggestions derived from my own experience as to successful treatment, as I have never, except in one case (No. 3), seen the patient again. As a general rule, cinchona, iron, and abstinence from sweets, acids, and, above all, milk and cheese, may be found of service, and, where practicable, recourse should be had to those mineral waters which are of service in gouty and rheumatic cases. Turkish baths are serviceable, and salt-water baths, under proper precautions, most beneficial. Flannel should always be worn next the skin. I must not omit, however, what is perhaps of equal importance with iron—cod-liver oil. It should enter into the daily diet of these patients, and be as familiar an article of food as toast, potatoes, or tea.

ARTICLE III.—*Notes on a Case of Chronic Chloral Poisoning.* By
T. INGLIS, M.R.C.P.E., Royal Edinburgh Asylum.

F. S. P., æt. 47, shopkeeper, admitted to the Royal Edinburgh Asylum, under certificates certifying that he was labouring under "great mental debility, impaired memory, was noisy, at times violent, and had delusions."

Family History.—Patient's father died of kidney disease at an advanced age. Mother "nervous," died of paralysis. Two sisters neurotic and eccentric. A brother was a confirmed dipsomaniac, and died of brain softening. Patient is a man of average intelligence and business capacity, of a neurotic temperament. Had generally enjoyed good health, but has been subject to asthma. His habits were temperate, and till three weeks before admission had been "teetotal" for ten years.

History of Present Attack.—About seven years ago patient was ordered by his medical attendant a mixture containing the hydrate of chloral and the bromide of potassium in order to relieve a spasmodic retention of urine, of which he then complained. He took about a drachm of each of these drugs daily for six years regularly, and during that time neither he nor his friends observed any hurtful effects, either mental or bodily. Patient confesses, however, that the drug had enslaved him to some extent, as he felt a desire for its sedative effect apart from its medicinal action, somewhat akin to the drink-craving of the habitual tippler.

Six years after patient began taking chloral he had an attack of bronchitis, and was ordered a mixture containing chloral (no bromide this time) to allay the breathlessness and procure sleep. The recovery from the bronchitis was rapid, but at the same time extra business cares, and the death of his brother, brought on some mental depression, and he sought oblivion in chloral. At first a 60-grain dose was the quantity taken, but was gradually increased till he took 180 grains per diem. Till six months before admission he was able to attend to and transact business, carrying the bottle with solution of chloral in his pocket, and taking a dose every hour, or even every half-hour. The sedative effect of the chloral was produced in from five or ten minutes, and lasted from half-an-hour to an hour. He never exceeded a dose of ten grains at a time, or took a larger one at night, but if he chanced to waken he repeated the dose. Sleep was not induced, but a calmative soothing feeling; and with each dose a dreamy sense of comfort and *bien-être* stole over him, seeming to raise him above the cares and anxieties of life. The effect seemed to be somewhat akin to that of opium, except that there was no tendency to sleep. He complained of no headache, vertigo, or active sense of depression as result of the drug, but a feeling of lassitude and nervous debility and exhaustion arose, together with an inaptitude for work, and incapacity for continuous thought. He became irritable and peevish, and when anything occurred to annoy him chloral was his sole panacea.

There was also a permanent weakening of the digestive powers, his appetite declined, food lost its relish, and he took little nourishment. Nausea and sour eructations were complained of, and vomiting occurred frequently. He began to be troubled with piles, and the feces became hard and white. He had slight jaundice, but no flushings, cutaneous congestion, or rush. During all this time he took no stimulants.

As he abandoned himself to the fascination of chloral eating, and the "tyrant custom" grew upon him, his friends observed, together with the intellectual infeeblement, a distinct moral alienation, a perversion of his whole affective life and character. He became untruthful, deceitful, the natural affection for his wife and children became blunted, a diseased dislike taking its place. He

grew irritable and passionate, and at times threatened violence to his wife. In spite of her entreaties, he would leave the house and wander aimlessly about the streets, not knowing whither he went. He became regardless of duty and self-respect—in short, he had drifted imperceptibly into moral insanity.

Three weeks before admission he discontinued using the chloral, and took to whisky instead. He did not drink enough to produce complete intoxication, but sufficient to keep himself in a chronic condition of muddle and confusion. In a day or two he became restless, excited, and quite unmanageable. Diarrhœa set in, and was followed by a great discharge of blood from the bowels. He grew violent and impulsive and threatened suicide. Then he got into a state resembling delirium tremens. The special senses became perverted, imaginary voices mocked him, while spectral snakes and loathsome animals surrounded him. Sleep almost deserted him, and was broken by haunted dreams “with dreadful faces throng’d and fiery arms.”

This terrible condition was terminated by three severe epileptiform attacks, following each other at intervals of four hours. The paroxysms were of the true epileptoid type, and were attended with complete unconsciousness, arrested respiration, clonic convulsion, and tonic spasm. He foamed at the mouth, and bit his tongue severely. The after-stage of stupor succeeded, leaving him in an extremely weak and precarious condition. Rallying he again became noisy and excited, and was sent to the hospital, but was discharged as the maniacal outbreak was transient, and as not being a fit patient for a hospital. He was then sent to the asylum.

State on Admission.—Patient is a man of average height and development, and appears prematurely old and broken-down. Is in a very weak anæmic state, being unable to speak above an undertone, and can hardly walk. Expression blank and vacant. Eyes dull and meaningless.

Mental.—The predominant mental symptom was great enfeeblement of mind. He was perfectly silly and childish, and almost imbecile in manner. There was no excitement, but rather slight depression of mind. He was very emotional, and would laugh and cry alternately without adequate cause. He took no interest in what was going on around him. His replies to questions were rambling, disconnected, and often incoherent, he being unable to sustain a conversation of any length, or carry out a consecutive line of thought. Memory was much impaired, indeed almost obliterated, he could not tell his age, or where he came from. Had vague fleeting delusions on various subjects, as that the Queen took a special interest in him.

Bodily Nervous System.—There was persistent muscular tremulousness of the upper and lower extremities, causing great unsteadiness, so that he required assistance to be able to walk, and the finer acts of co-ordinative power, as writing, whistling, could

not be performed at all. The tongue was furred in the centre, tremulous throughout, with fibrillary twitchings at the edges, and it was pointed markedly to the right side. Articulation was impaired, being thick and indistinct. The pupils were equal, dilated, irregular at the margins, and insensible to light.

The right side of the face was partially paralyzed and wanting expression. The reflex action of the cord was much impaired. Common sensation was acute, verging on hyperæsthesia. He complained of sleeplessness and exhaustion, but had no headache or neuralgic pains.

There was no cutaneous eruption. Muscularity poor and flabby. Conjunctivæ yellow. Respiratory and circulatory systems normal. Pulse 67, weak and thready. Temperature 97°. Urine, specific gravity, 1005. No albumen, sugar, bile, or tube casts. Could only make water at night, when it was passed in large quantity, was clear and limpid, resembling the urine of hysteria. Bowels were again confined, fæces hard, and of a white colour.

Progress of Case.—No chloral or any narcotic was given after admission, and, in spite of the patient's pleadings for soporifics, they were entirely withheld. For some nights he hardly slept, but had short snatches of sleep during the day. Was ordered a tonic mixture containing strychnine, strengthening diet, and as much exercise in the open air as he could bear. The regular action of the bowels was promoted by gentle aperients, active purgation being avoided, it being considered that the constipation resulted from the partial paralysis of the trophic centres.

The appetite for food returned slowly, but he gained in flesh and appearance very rapidly. Pulse increased in strength, and the temperature rose to 98°·4 F. in a few days. The motor tremulousness and the paralytic symptoms disappeared in an astonishingly short time, the disturbance of the articulation and the facial paresis passing off first, while the reflex action and sensation more gradually recovered their normal tone. Pupils remained dilated for about three weeks, but their outline became regular, and they contracted normally under the influence of light in a few days.

Mentally his convalescence was equally speedy. The delusions were dissipated in a day or two. Memory and coherence soon returned, the recollection of the events during the latter part of his illness remaining a perfect blank. After a short stage of stupor and confusion his intellect regained strength by degrees, and his emotions and affections resumed their natural condition. He was discharged "recovered" three months after admission.

Remarks.—Although chloral has now been extensively used¹ by the public as a popular hypnotic for some years, and frequently cases of acute poisoning following an excessive dose, taken inadvertently or with suicidal intent, are recorded in the

medical journals, cases of chronic poisoning by chloral are much rarer, and the symptoms recorded in these are variable. Generally, however, habitual chloral drinking has been found to cause bodily disorders such as paralysis and neuralgia, and to act prejudicially on the mental powers. Insanity is sometimes caused by its abuse, but few such cases find their way to asylums, as the disorder is generally transient, and the class of patients using chloral can afford to be treated at their own homes. The patient in this case was by family history and diathesis predisposed to nerve-tissue degeneration. The exciting cause of his illness was chloralism. The drinking outburst is to be regarded as a symptom which concurred with the other causes, "producing a progressive effect, the end of which was the evolution of madness."

Dr B. W. Richardson, in Report on Toxicology (*Medico-Chirurgical Review*, January 1872), has noted some of the symptoms of chronic chloral poisoning—viz., sleeplessness, mental irritability, muscular prostration, uncertainty of movement, caprice of appetite, and frequent nausea. "In some cases there is injection of the conjunctivæ, and in other cases yellowness. The urine in extreme cases contains albumen, and the bowels are commonly constipated, the evacuations being white and hard. Chloral hydrate does not produce the ecstatic dream or delirium caused by opium or haschisch; on the contrary, it causes, through all the stages of its action, a sense rather of depression than of elevation of mental faculty."

The greater number of the symptoms were present in this case, along with others of even graver import than those recorded by Dr Richardson, as the delirium, paralysis, etc., which have been also observed by other writers.

Dr Grainger Stewart (*Edinburgh Medical Journal*, June 1870) mentions a case of temporary insanity, accompanied by delirium, caused by chloralism, the patient fancying he saw rats and mice running about him.

A case resembling this one in some particulars is recorded, in the *American Journal of Insanity*, of a lady, who, in consequence of the protracted use of chloral was utterly prostrated by the urgent dyspnoea; facial paralysis, and all the signs of cerebral effusion, were present.

Schüle¹ was the first to demonstrate by means of the ophthalmoscope the congested state of the interior of the brain in a chloralized patient, and showed that after a quantity of alcohol had been injected, the congestion was increased, and continued for some days. The paralyzing influence of the chloral on the vasomotor nervous system was also recorded, causing insufficient innervation of the cutaneous vessels, producing the flushings, erythema, and petechiæ generally observed, and in this instance bleeding from the nose, hæmorrhage from the bowel, etc., involv-

¹ *Allgemeine Zeitschrift für Psychiatrie*, bd. 28, heft 1.

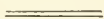
ing also the higher centres in the brain and medulla, and so causing the delirium and paralysis. It has been proved that chloral exercises a powerful action on the par vagum, causing dyspnoea and palpitation.

The paralytic effect on the pneumogastric and the gastric branches of the sympathetic in this instance produced the nausea, eructations, and vomiting complained of. The symptoms of hepatic disorder, viz., the yellow conjunctivæ, the slight jaundice, hard white faces, and secondarily the hæmorrhoids, are to be traced to the paresis of the nervous supply to the portal system (the celiac plexus and pneumogastric), causing paralysis, relaxation, and passive congestion of the bloodvessels. Chloralism also invariably reduces the temperature—the temperature of F. S. P. being considerably below the normal standard.

The neuralgic pains, frequently complained of, were absent in this instance, but were present in two patients, who had been treated with chloral in the asylum, which ceased when the habitual dose was discontinued.

The paralyzing effect on the mental faculties, and the moral deterioration produced by the drug, bear a striking resemblance to the psychical changes observed in dipsomania. The symptoms are, in fact, almost identical, with, however, this exception, that while in this case at the same time the bodily disturbances evanished, the patient appeared to get rid of the mental derangement. This does not occur in the dipsomaniac, he retaining all the deceitful and lying tendencies and moral alienation of his disease when sober, thus rendering the prognosis of chloralism as regards relapse in a measure more hopeful.

The total discontinuance of the chloral, the alterative and tonic effect of strychnine (which is regarded by some as an antidote for chloral), and the physiological life enforced by asylum discipline, all no doubt contributed materially to the recovery of the patient.



ARTICLE IV.—*Notes and Remarks on Three Cases of Puerperal Convulsions.* By T. M. LOWNDS, M.D., Egham, Surrey.

CASE I. occurred at Mt. Aboo, Rajpootana, Bengal.

Mrs —, the mother of several children, was prematurely confined of a stillborn child, 27th April 1855, and had progressed fairly well until the 4th May, when she was attacked with an hysteric fit when sitting up in bed. It should be mentioned that, before and after her confinement, she had suffered from headaches, not of a severe character, which were always relieved by stimulants. She had also had diarrhœa for three days before confinement. On the morning of the seizure, she had remarked she was better than usual, but just before the fit had sent away her children, saying,

she felt tired. The fit at first seemed to be distinctly hysteric, but speedily passed into epileptiform.

About half-past 2 P.M. I for the first time saw the case, with Dr Edden, who had attended her in the confinement. Her state was as follows: She was not quite sensible, pupils dilated, quite sensitive to light; no injection of eyes; tongue clean; pulse 120, weak; no flushing of face. She said she had some pain across her forehead, and that she wished to get up, as she felt more comfortable when sitting. A draught containing stimulants and anti-spasmodics was given, and the head kept cool with a lotion containing Eau de Cologne. Some relief was expressed, until another fit came on, when an enema of turpentine, castor-oil, and mustard was administered, which speedily returned, and with it a quantity of fluid fæces natural in appearance. She felt easier for a little time and inclined to sleep. No urine was obtained at any time for examination. Speedily convulsion succeeded convulsion, and death took place twenty-five hours after her seizure. The treatment besides was a small leeching, cold affusion to head, and a warm bath. Except for a few minutes about 8 P.M., when after diffusible stimulants she was conscious, she remained quite insensible.

CASE II.—Mrs —, about forty-one years of age, was prematurely confined, 8th July 1872, of her second child, a living son, about 8.30 A.M. The labour was very rapid, and the baby was as nearly as could be computed at the eighth month complete. Mrs — had for a month previously suffered at times from headache and constipation, but no trace of œdema.

I was not summoned till the child was born, as the pains were so slight during the night, and the labour at last extremely rapid. All seemed quite well. m 20 liq. morph. muriat. were prescribed. At about four in the afternoon a large quantity of urine was passed. The patient said she had suffered much from headache at times during the day, which she attributed to having had little sleep during the night. At half-past five in the afternoon I was hurriedly sent for, as a severe convulsive seizure had taken place. It was nearly gone when I arrived, and I at once administered a large purgative enema, which acted speedily and brought away a considerable quantity of fæces. Mrs — seemed relieved, and a 20-grain dose of chloral hydrate in syrup and water was prescribed, and ordered to be repeated in two hours if sleep was not obtained. Mrs — seemed well, and inclined to sleep till 10.30 P.M., when convulsions again supervened, and this time much more violently, and repeated every half to three-quarters of an hour, the patient not being sensible, and was very violent between the fits. No urine could be obtained for testing. The hair was cut short and an ice-bag applied, but she was continuously violent and would not take anything, nor remain in bed even. At 4.30 A.M., Dr Ellison of Windsor saw her with me, and for the first time a few drops of

urine were obtained, which became almost solid on boiling. The patient would take nothing. The face was flushed at all times, deeply so during the fits. Ice was kept applied to the head and neck. Pulse 130 to 140. It was determined to try fomentations to the abdomen with tincture of digitalis.

About 6 A.M. the fomentations were so applied, and in three-quarters of an hour about 8 oz. of water were passed, the patient insisting on getting up for the purpose. After this she became quieter (only one slight fit having supervened), and in two hours a large quantity of urine was passed in the bed involuntarily. The patient's pulse became quiet (from 90 to 96), the flush subsided, and she answered questions coherently. At 11.30 the late Dr Cape and Dr G. C. Murray saw her with me in consultation. Her state was much as above described, except that more urine was passing as she lay. A second enema was given, and turpentine stupes with digitalis substituted for the fomentation with digitalis, and a favourable but guarded prognosis given. The flow of urine from the time that the turpentine was applied was not nearly so free, and in less than an hour it stopped, when the fomentations were resumed, the urine again coming as before. About 3 P.M. the patient became fully conscious. She had before, as I have said, answered questions coherently, but without any memory, and not knowing to whom she was speaking.

She slept during the night, and no bad symptoms recurred. The flow of urine was kept up next day by a liniment containing equal parts of liniment saponis and tinct. digital.

After this tinct. ferri perchlor. and chlorate of potass in mixture were chiefly used. The urine continued albuminous for nearly a month, and finally disappeared.

CASE III.—Mrs —, æt. 30, pregnant with her sixth child, consulted me about severe abdominal uneasiness on the 16th December 1876 (she expected her confinement in a fortnight), diarrhœa and great œdema of both legs and thighs, symptoms from which she had never suffered in any of her previous pregnancies. I examined her urine, and finding it intensely albuminous (the volume of albumen occupied half that of the urine tested) I purged her very freely, and on the 17th she was free from pain, and said she was much better. The pains returned slightly on the 18th, but not to any extent, and at half-past eight in the evening I was sent for hurriedly, and about nine o'clock I found her lying comatose, with a living baby born and the afterbirth detached without any hæmorrhage. I was told that she had suddenly fallen down in a fit, and had become much convulsed, when the child was at once born. In about half an hour a second very severe convulsion occurred, and as soon as materials could be obtained from a cottage near, I administered a large injection, containing an ounce of Epsom-salts and as much castor-oil; a portion of this with some fluid fæces returned, but the con-

vulsions returned even worse than before. She was not conscious during the interval, but breathed stertorously. I administered chloroform and ether as indications of each fit came on, and during the fit, but these were in no degree abated. I at once sent for tinct. digital., but before it came the patient had two convulsions, each more severe than the one previous, the face continued longer almost black, and the breathing with each recurring fit more and more oppressed. Fearing death in the fits I opened a vein in the arm, and bled to about 20 oz., stopping the flow only when the lips lost all livid hue, and became a little paler than natural. For half an hour fomentation was applied with tinct. digitalis, and held on as well as could be considering her struggles. At 11 or 11.15 P.M., a very severe convulsion came on with all the former symptoms, and I again let the vein bleed to the extent of 10 oz. The head was hot, but not very; pulse before the bleeding 100, very strong and sharp. The convulsions now recurred about every half or three-quarters of an hour, but not with the same aspect of impending death from lung and heart oppression, until a quarter to five in the morning, when again the old severe form of fit came on, and for the third time I opened the vein and let about 10 oz. more blood flow.

All this time the digitalis fomentation had been continued, and about half-past 1 A.M. I with difficulty passed a catheter, and drew off about two tablespoonfuls of very dark fluid from bladder.

5 A.M., fits continued; stertorous breathing between.

5½ A.M., gave 12 grs. chloral hyd. and 30 grs. brom. potass. by injections.

6½ A.M., gave do. do. do.

7½ A.M., gave do. do. do.

All this time the fits continued, and ice was applied to head; but the violence of the fits was gone at 8½. I again passed the catheter, and drew off about three tablespoonfuls of clear, but dark urine. Still the digitalis fomentation was kept applied as well as could be from her struggling, and once I injected, hypodermically, ⅓ of a grain of digitalis, but my notes do not say at what time. At 10 A.M. a convulsion occurred, and immediately after this I passed the catheter, and drew off, to my great satisfaction, 6½ oz. of clear, but highly albuminous urine. At 11 A.M. urine was passed involuntarily in bed, dribbling away and soaking the napkins; at the same time lochial discharge was observed. No further fit occurred till half-past 1 o'clock, when a tremor, rather than a fit, passed over her countenance, and this was the last. Pulse 88 to 90; lies apparently asleep; breathing stertorously. Injections of tea and beef-tea had been given from time to time during the morning, and the only treatment I ordered was that these and the digitalis fomentations should be kept up.

19th Dec. *Vespere*.—Just in same state. Continued.

20th Dec. 10 A.M.—Involuntary flow of urine continues, but the lips and tongue are dry and parched. No injections have been

given owing to the stupidity of the woman in attendance, who was afraid to administer them; lies comatose. I told husband to insist on injections.

Vespere.—Injections regularly given; tongue and lips moist; comatose, some stertor; calomel gr. v. to be placed on tongue.

R Tine. ferri. ʒij.
Acet. potass, ʒiv.
Sp. aeth. nitric, ʒiv.
Aq. ʒviiij. ʒss. 3d hour by inject.

21st.—In same state, except that the temperature has markedly risen, 101°; pulse, 110.

21st. *Vesp.*—Comatose, but swallowed a little tea and beef-tea when put in mouth with a spoon. Temperature 99°·8.

22d.—Sleep more quiet; urine horribly offensive from ammoniacal decomposition.

R Acid. benzoic. ʒj.
Sodæ phos. ʒij.
Sy. rhoeados, ʒj.
Aq. ad ʒviiij. M. ʒj. every 4 hours in water.

Pulse, 84.

Vespere.—She has had two doses of the mixture, and the urine is no longer offensive. Spoke incoherently to-day for first time.

23d.—Looks about her with a vacant stare.

24th.—Rather more sensible in morning, when she suddenly became violent for two hours. Got up to micturate, and to the stool.

I need not trace this case in its daily aspect farther, only, I may state, that the fits of violence, and not knowing even her husband, lasted for five days, and then she gradually recovered strength and memory. This last was not fully recovered for many weeks, and she never remembered the occurrences of two or three days before the first fit and the confinement came on together. Some seven or eight days before her confinement, some danger had threatened her children from fire, and the first intelligible words she said on the fifth day was—"the children fire." Her recovery was complete at the end of six weeks.

I may be permitted to make a few remarks on these cases. The first occurred in a delicate lady of leucophlegmatic temperament; and though no urine was obtained for testing, yet I have no doubt that uræmia was the cause of the affection, and did not seem at all amenable to treatment; I abridged my notes made at the time.

All the cases of delivery were more or less premature; and though the convulsions were each post-partum, except the last, when the first convulsion and the delivery were about synchronous, yet the convulsions continued for sixteen hours at intervals, and absolute insensibility for ninety-six hours. Little need be said about the second case, except the very speedy effect of the digitalis applied with fomentation, and the long con-

tinuance of the albuminuria (a month). In these days of fear of bloodletting, the use of this remedial measure requires perhaps some explanation. I bled from the arm, with no hope of cutting short the convulsions, but when their violence became so great as in my opinion to threaten immediate dissolution, I opened a vein with a scalpel to relieve the right side of the heart, and subdue the violence of the fits. About 40 ounces of blood altogether were drawn in this way. But it must be remembered that no loss took place when the placenta came away. Again, the action of digitalis was most satisfactory; it was six to eight hours before this was fairly established, but when $6\frac{1}{2}$ ounces of urine had been obtained, only one fit, and that rather "a tremor than a fit," closed the convulsive seizures, three and a half hours having elapsed since the previous one. The flow of urine was easily kept up by small quantities, 5j. or 5ij. every two hours or so of the tincture of digitalis covered by warm flannel fomentations.

I think the dry lips and tongue on the 20th were distinctly owing to the fluid in the system not having been kept up; for these ceased as soon as frequent rectal injections enabled the blood to recoup its fluids, a large part of which had been passed off by the kidneys. The horribly ammoniacal urine ceasing after two doses of benzoic acid, merits a passing mention.

I make these remarks, as the apparent success of the digitalis fomentation in two severe cases, the last especially so, where undoubtedly the convulsions were due to uræmic poisoning; and it seems to me that outward application of digitalis may be a most useful adjunct, nay, almost a standby, when nothing can be taken by the mouth. It was suggested in the second case, as I remembered hearing Sir R. Christison mention it in his lectures in 1851. Chloral seemed to do no good in either case, and I feared that it might even increase the poisoned state of the blood; therefore I did not push it to the extent that I have seen recorded. In the Savileian Lectures now in course of publication, Dr George Johnson so plainly states this, that I quote a few lines. In speaking of small doses of bromide potass and chloral combined in the paroxysmal dyspnoea of Bright's disease, Dr Johnson says:—"If, however, the secretion of urine be very scanty, and the blood consequently much contaminated by retained excreta, the chloral may fail to relieve, and *it may even add to the distress.*"¹ It is true that the causes of the disease referred to by Dr Johnson, and the cases that I have recorded differ, but the effect on the blood was the same. I observed no effect from the injection of digitaline, and it was a less convenient mode of application, as the tincture could be applied easily by the nurse at the intervals ordered. The inhalation of chloroform and ether had no tranquillizing effect, and the same objection as to chloral applied to this, so long as the breathing continued stertorous.

¹ The italics are mine.

ARTICLE V.—*Puerperal Embolism—Aphasia—Hemiplegia—Recovery.* By A. D. LEITH NAPIER, M.B., C.M., Fraserburgh.

THE following case seems worthy of record, exemplifying, as it does, one of the rarest post-partum affections met with in ordinary practice. So rare is embolism, apart from septic influences, that few of the text-books even allude to it; and, in those in which the disease is mentioned, the authors content themselves with a word or two *en passant*. Such cases are most frequently interesting from a pathological aspect; and, generally, we can demonstrate the correctness of our diagnosis on the post-mortem table. Fortunately for my patient, happier results attended her illness.

Mrs John S. was delivered of a daughter on 15th April 1877, six years having elapsed since her last accouchment. Labour was said to have been natural and easy. She recovered well, had been up, and moving about, but had not resumed household duties. On 2d May she was subjected to considerable vexation; shortly after, when sitting in an arm-chair in her bed-room, she suddenly became speechless, and was said to have had "a faint." On visiting, I found her in bed. She spoke very indistinctly, and with much hesitancy, saying she "felt queer all over," but could not distinguish any definite pain, or account for the sudden loss of speech. She had indefinite cramp-like pains in the calf of the left leg. There was no abdominal tympanitis; the coloured lochia had disappeared; the whitish discharge continued; milk was plentiful. The temperature and pulse were normal. She lay quietly, and did not wish to be spoken to, or in any way disturbed.

Knowing that Mrs S. was inclined to hysteria, I made a doubtful diagnosis, and prescribed as follows:—℞ Tinct. gelsemin. ℥40, tinct. valerian ammon. ℥50, potas. bromid. ℥iiss., syr. aquam. ad ℥ii. Fiant haust. Sg. Half to be taken at night; also, a draught of turpentine and castor-oil to be taken early next morning.

4th May.—Slept lightly through the night; has not spoken since my last visit, though she has several times tried to do so. On my asking if she felt her right arm numb, she replied monosyllabically in the affirmative.

5th.—Her right arm is partially paralyzed. She cannot put out her tongue, but swallows well. ℞ Potas. bromid. ℥v., liq. arsenicalis ℥50, acid. carbolic gr. iii., syr. simp. ℥vi., aq. ad ℥viii. M. f. mist., ℥ss. t. i. d.

6th.—Much the same—still less power in upper extremity. Ordered a blister to back of neck.

7th.—Undoubtedly hemiplegia. Acinesia more marked than anæsthesia; this observation applies especially to the right leg. She has no pain in the head; cannot put out her tongue, swallows

well. All that she can articulate is "Ay" and "No." She seems to understand perfectly what is said to her. The left pupil appears rather smaller than the right. Pulse weak, regular, 80 per minute. Temperature, 98° in left axilla; 99° in right. Urine in moderate quantity; acid reaction, sp. gr. 1030; no albumen; uric acid and phosphate of lime in large quantities.

8th.—Is able to put her tongue out imperfectly. Speaks a very little better; was able to say "a bit better," otherwise she cannot connect her words, and is not able to say what her husband's name is. She is cheery, hears well, and enjoys a joke. Her arm is more sensitive to-day, her leg still more useless. She has now plenty of milk, has nursed her baby several times since yesterday; is taking a fair quantity of food; tongue very foul; ordered a senna draught.

9th.—Medicine operated twice. Pulse 76. Grasp of right hand slightly stronger. Sensation is a little better in lower limb; but there is no voluntary motion. Prescribed iodide and bromide of potassium, and the application of electro-magnetism. Discontinued former mixture.

10th.—Urine more plentiful, contains phosphates; no albumen. Arm rather stronger. Leg unaltered.

12th.—Speech slightly better, otherwise in the same condition.

15th.—Drank a large quantity of milk on evening of 14th; was sick, vomited; slept badly; memory now perfectly confused; speech very incoherent.

20th.—Aphasic symptoms are still present to a considerable degree. Sat up yesterday evening. She was quite unable to dress her own hair. She has better sensation; but little improvement in the motility of the right leg.

23d.—Speaking very much better; but not perfectly yet. The sensation of the right arm is almost normal, as also is the sensation of the right leg; muscular co-ordination and power are very much restored to the arm; the leg is still almost motionless.

From this date slow and gradual improvement took place, and a daily record was not kept. So long after as the middle of July, she complained of great general debility and want of strength in the right arm and leg.

Such cases tell their own tale, and there is little necessity for further elaboration. Had aphasia been the only symptom, there might have been some dubiety as to the verity of the diagnosis, as the sudden emotional shock might, in a hysterical woman, have accounted for temporary interruption of the processes of ideation, and these symptoms, notwithstanding their peculiarities, might have been really due to that protean hysteria; but the continued and prolonged nature of the case, the evident absence of mental disturbance of the higher centres, *e.g.*, those of rational thought, the implication of the tongue and eye, the gradual development of hemiplegia, the want of the peculiar

"heel dragging" in walking, after partial recovery, and the slow, lengthened convalescence, negative such a supposition.

We have here a history of interrupted brain function of a special centre (that of speech), followed gradually by hemiplegia of the right side, conditions known to depend on certain brain lesions of the left convolutions, so that, beyond doubt, the left middle cerebral artery had been suddenly occluded, and the consequent train of symptoms indicative of impaired or arrested function of the third left frontal convolution, of the left corpus striatum, and the convolutions in its vicinity followed.

The treatment of this class of cases, at best of little avail, is, by the peculiar condition of a recently-delivered woman, as regards digestion, circulation, and the blood itself, rendered still more unsatisfactory; still we may postulate, that such treatment as will sustain, yet not over-stimulate, combined with perfect mental and physical rest and quietude, and intelligent nursing, which anticipates the unexpressed thought, will do much to promote nature's cure.

In conclusion, despite our increased knowledge of the pathology of cerebral embolism, I fear we must confess that it is fully as wise to trust our treatment to the *vis naturæ* as to the *vis medicatrix*.



ARTICLE VI.—*Tubercular Leprosy*. By J. LABONTÉ, M.D.,
M.R.C.P. Edin., Mauritius.

Symptomatology.—From observation and local experience of the disease, which of late has become very prevalent in Mauritius, it appears that,

1st, Tubercular leprosy shows itself first on the face, a circumstance to be accounted for by the extreme vascularity of the affected part, and by the agency of physical causes which are ever in operation in the tropics, such as exposure to the heat of the sun, and so on. The hands rank next, probably for like reason, and that much is certain, whenever the disease has set on those regions, it is to be found well marked elsewhere. On the face, it makes its appearance as a blotch, commonly of a pale white colour, but oftentimes of a brown or dark red hue, causing no pain, except when in considerable number, in which case there is felt a burning sensation. On the extremities, and in the region of the buttocks particularly, they are exceedingly characteristic, some retaining their sensibility, others having lost it completely (White); others, again, having but a blunt sensibility. At this very first stage of the disease, we commonly find that sensibility is dull or lost at the inner surface of the forearm, extending to the ring and little fingers. The duration of that stage is certainly comparatively long in all cases, but extremely short when the patient is of dissipated habits or addicted to drink.

2*l*, In the second stage of the disease blotches and patches undergo remarkable changes. They extend in circumference, become stronger in colour, and project very manifestly above the level of the skin. The patient experiences a feeling of lassitude and numbness; there are febrile symptoms, with partial loss of appetite and sleep; the face, as a whole, is swelled, and of a bronzed or dark red aspect, with a sort of metallic lustre or greasy coating; the sclerotics are injected; there is sometimes intolerance of light; the breathing becomes rather difficult, and, under those circumstances, the leonine expression peculiar to the disease begins to be manifest. Then, also, we very often begin to notice those great changes in the innervation, which are such, that whilst over some regions of the body sensibility is comparatively lost, over others it is exalted, and that is specially appreciable as regards the special senses, such as touch, smell, taste, muscular sense, etc. Both motor and sensory branches of the spinal nerves become altered in their functions; the ulnar nerve, as it courses down the arm, may invariably be felt greatly hypertrophied, exceedingly painful to touch and pressure. The cerebral functions, as a whole, are of a normal character; one symptom, on which much stress has been laid, may be as often present as wanting—sexual desire. In the young of both sexes puberty is retarded.

3*l*, The third stage, following the preceding, after an interval longer than between the first and second, presents graver symptoms still, both skin and mucous membrane having undergone great histological changes. The *materies morbi*, whatever it be, cast out on the surface of the skin and of the mucous membrane, in successive layers, at well-marked intervals, corresponding to acute febrile attacks very much resembling ordinary attacks of ague, becomes organized as tubercle, either discrete or confluent, forming, in the latter case, hard lumps known as tubercular masses, to be found over every region of the body, except, perhaps, sometimes on the thorax and abdomen, where we most commonly find large discoloured patches of a white or yellow wax hue. The skin generally is denuded of hair, and is dry. In some cases it looks as if it had been tattooed, in some it is wrinkled or cracked, both of which conditions are not uncommonly met with in one and the same patient. In some cases, again, the skin, though unhealthy, is oftentimes covered with profuse sweat. Respiration is obstructed by tumefaction of the mucous membrane of the air-passages; there is thickening and distortion of the nose by tubercles of various size having their seat in the nostrils. From swelling and inflammation of the tonsils and uvula, deglutition is painful; vision is often impaired by intercurrent iritis; the superficial glands are generally swollen and painful, those at the groin, axilla, and neck especially; there is pain felt all over the body, and in the hands, feet, and calves; it is sometimes of a persistent and burning character, causing great agony and suffering to the patient. Bullæ of various size

show themselves, particularly on the hands and feet, fingers and toes, causing no pain, except when after bursting they form ulcers difficult to heal. There is physical and moral prostration.

4th, Ulceration, a graver symptom still, follows in the next stage of the disease. When in the nostrils, it produces profuse and repeated hæmorrhage; when at the palate, it extends all along the median line, from the upper canines backwards, and interferes with mastication; at the throat, it interferes with deglutition; at the larynx, it produces hoarseness, sometimes aphonia; in the air-tubes, it excites a troublesome cough, and, in the eyes, it causes loss of sight. Breath is offensive, as also the discharge from the ulcerations, which sometimes is purulent, sometimes sanio-purulent. If the infiltration of tubercular matter be only very moderate, and the lesion confined more particularly to the external parts, the last evolution is, by partial amputation of the diseased parts, producing flattening of the nose and disfiguration, dropping of one or many phalanges and toes, nay, of the foot as a whole in many cases. The stumps that are left may heal, and do sometimes heal satisfactorily; and the patient, after having gone through that ordeal, may live, and lives for years in a crippled and mutilated condition. Such instances, by no means rare, may be considered as cases of spontaneous cure. But when, with the external manifestation of the disease, we have evidence that internal organs essential to life have not escaped infiltration, then a complete breaking-up of the system is set up to terminate rapidly in death.

Our present knowledge of the disease warrants us to infer,

1st, That tubercular leprosy is a dyscrasia.

2d, That its incubation is uncertain, being met with at different periods of life, although puberty would seem to be most favourable for its development.

3d, That sex has no influence over the disease, which is just as common with men as it is with women.

4th, That habitual residence, so far as the population is concerned, is of no consequence whatever; the disease in Mauritius being met as often with people living inland as with those living by the sea-shore.

5th, That Asiatics and Creoles, indiscriminately, whether of African or of Asiatic descent, are especially liable to the disease; but that Europeans are under the same liability when in the colonies, numbers of cases having occurred amongst them,—a circumstance which further would tend to show that climate and hygiene have something to do with the disease under consideration. So far as temperature goes, there can be no doubt that a low temperature acts injuriously on leper patients.

6th, That diet no doubt influences the disease, low as high living being equally bad; whereas, a well-regulated diet of a nutritious but less stimulating kind, combined with proper hygiene, has always done good to the patient.

7th, And that the poison of syphilis, quite distinct from that of leprosy, has, in a large number of cases, concurred to produce results very similar to what the poison of leprosy itself produces.

The natural progress of the disease may in its turn be summed as follows:—

1st, Incubation of undetermined duration.

2d, Evolution, most common at puberty, but very frequent in childhood.

3d, Deposit of the *materies morbi* on the skin, its proper emunctory.

4th, Deposit of the same on the mucous membrane, which is only a modification of the skin when the latter has become saturated.

5th, Well-marked and distinct intermittences between each successive evolution, varying from months to years.

6th, Organization of the morbid matter, which is of an albuminous kind, into tubercle and tubercular masses.

7th, Irritation and inflammation set up by their action as foreign bodies causing hæmorrhage, ulceration, and partial amputation by gangrene.

8th, Innervation impaired in many of its most important functions.

Contagion.—So far as my experience goes, I do not feel warranted to say that tubercular leprosy is a catching disease. I have now for many years been in constant communication with patients suffering from that complaint in all its different stages, and have even slept in their bed without any evil consequence following. Others, alike the members of families where there have been patients suffering in the same way, for months and years, have kept on well, although constantly exposed to the noxious influence of the sick to whom they tendered their best care. I am not aware that the disease has spread to the nurses in the Colonial Leper Hospital, and I have ample evidence to the effect that the disease is not catching by contact, but of such a nature as not to stand publicity. I doubt very much, too, although I have often heard of, but never saw the case of, a heifer at the Leper Hospital, that the disease can extend by contagion from man to the lower animals. On that point, however, I cannot be very affirmative, as my observation is incomplete; but the fact that I purposely left two healthy horses in charge of leprosy grooms for a space of nearly two years, one of the patients in the ulcerative stage, but yet able to do good work, the other in the state of transition from the first to the second stage of the disease, and that, nevertheless, both horses, up to this day, have shown no signs whatever of the disease, is strongly against the notion that tubercular leprosy may extend from man to the lower animals by contagion.

Disease is hereditary.—Research and observation leave no room for doubt on that point. We have it for a positive fact in the history of almost every patient who has no interest to conceal the truth. The laws of atavism, which regulate other diseases classed

as hereditary, are applicable in this particular case. We know not how many generations it takes to wear itself out; but we know that, now and again, from long preservation of the morbid germ, a case will quite unexpectedly show itself in those families whose ancestors in their lifetime were known to have had the disease itself, or a well-marked tendency thereto. Thus I account, in some measure, for the wide spread and extent of the disease in the colony being brought about by intermarriages of the healthy with others apparently healthy too, but whose blood, in the meantime, is tainted by the latent germ of tubercular leprosy. The issue of those marriages need not all be leprosy; but a few are sure to get the disease, which, after careful research, can surely and invariably be traced back to its origin, whether on the paternal or maternal side.

Tubercular phthisis, elephantiasis or Barbadoes leg, and cancer, appearing very frequently in a family where leprosy is known to be hereditary, shows that those various diseases are closely connected with each other. I have seen, on different occasions, in one and the same family where leprosy is hereditary, every member of the family dying of acute phthisis at puberty, and even at an advanced age, the only surviving member being affected with leprosy at that time of life. I have seen cancer in the daughter and leprosy in the mother, Barbadoes leg in the father, and tubercular leprosy in the son, both of which latter diseases are not rarely met with in families in which tubercular leprosy, although not apparent, is known to be hereditary.

Direct inoculation is, to our mind, a sure and certain way of transmitting the disease from the sick to the healthy. Our grounds for that argument are the immense diffusion of leprosy, corresponding to the stringency of the colonial laws on vaccination. If the efficacy of vaccination with genuine cowpox as a protection against smallpox is beyond doubt, I hold that, in Mauritius, vaccination, as it is practised, instead of being a protection against an ordinary sickness, is just the means through which hundreds and thousands of children are yearly poisoned by impure lymph, which, sooner or later, is sure to make its evolution as skin disease of the mildest or very worst and severe sort, just as the poison of syphilis is being constantly inoculated to children. I strongly suspect, from what I have very often seen, that the poison of tubercular leprosy is also being inoculated at times unknowingly. Direct proof may be wanting on that point, and our inference is drawn simply from facts which, however, are not without their importance and significance; be that as it may, if we are to err at all, let it be on the safe side until further information.

(To be continued.)

ARTICLE VII.—*Reports of Cases from the Medical Mission Register of Neyoor, Travancore, South India.* By T. S. THOMSON, L.R.C.P. and S. Ed., *Medical-Missionary at Neyoor.*

I.—*Notes of an Outbreak of Cholera in Travancore in 1876.*

Permit me to add a quota of testimony to the spread of the contagion of cholera, having just returned from a visit to one of our dispensaries where cholera has broken out. This is the second outbreak of cholera in Travancore, South India, which has occurred in 1876. The first occurred in January of this year, being imported from Tinnevely on the eastern side, and traced as follows: Four coolies on the coffee estates on the hills (recently arrived from Palamcottah, on the eastern side) were attacked with cholera; two died, two recovered. The river *Coolitory*, rising at that place, conveyed the poison to others. It broke out at the mouth of this river shortly afterwards, and spread along the coast villages and thereafter to the inland towns. Fortunately, a few cases only occurred, the land being very dry and trees dying of the drought. Since the rains have come, and warmth following, the latent germs of the disease have become again manifest in those villages, and a fresh importation from the hills has lit up the disease in most of the villages on the banks of the river. To be more precise, I afford data of the last eruption of cholera, remembering, however, that cholera had been prevalent on the eastern side from December 1875. It was imported from Ceylon, then reached Tuticurin and Palamcotta, and was carried thence viâ Cape Comorin and Ghauts rivers to Travancore in January 1876; it then died out, and reappeared as follows:—

1. Four cases of cholera were reported from the Dispensary in Great Valley, Western Ghauts, on the 26th of September 1876.

2. On the 30th September 1876, two cases appeared at Thottavaram, on the banks of Coolitory River, ten miles away, viz., two girls aged seven and eight years were attacked simultaneously, and died. Villages and towns lower down river were not attacked.

3. The cholera spread in the course of the river, those only who drank of the river water being attacked at the beginning, viz.—At Atoor Dispensary this was very evident, the highway separating a Christian village from a heathen village. *The first had a well; the second the river.* Heathens were attacked; Christians exempt.

4. Those who could procure well water were exempt *at the outset* of the outbreak.

5. From 30th September 1876 to 1st November 1876, twenty-six cases of cholera and nineteen cases of choleraic diarrhœa were

entered in our Atoor Dispensary Register. Of those forty-five cases under treatment, two died, one a Christian girl, being in a state of collapse before medicine was given, the other a Sudra (heathen), who took but one dose of medicine and lived on the banks of the river.

6. Thirteen deaths are reported of cases in the district who did not seek aid at Dispensary.

7. Since 30th September to 30th November 1876, the disease has spread over an area of twenty miles (from seven to ten dying in a village), and about twenty villages attacked. They are generally evacuated, and thus the disease spreads.

II.—*Notes of Cases of Monstrosities.*

As cases of monstrosities have been occupying a prominent place in the *Lancet* of late, it may not be uninteresting shortly to narrate a few that have occurred in our practice here during the past four years.

The first case was a double monster brought to the Medical Mission Hospital at Neyoor, Travancore, South India, on the 1st January 1874. Labour was unusually difficult. The head of a hydrocephalous child presenting first, no assistance was solicited, and the woman made a good recovery, being brought next day in a cot to hospital, and returning home fourth day after delivery; and now well. The two children were united from the lower ribs downwards to the thighs. Both were born alive, and lived for forty-eight hours; partook of milk, cried simultaneously, and died together (asthenia). One leg, imperfectly developed, hanging from sacrum ($1\frac{1}{2}$ in.), gave the appearance of a rudimentary tail to the pair. Another leg also was less perfectly developed than the remaining two, which were perfect. One placental cord; placenta not seen; sex female.

On post-mortem examination, one child was found healthy and well-formed; but in the other, tuberculous degeneration in the lungs, heart, pericardium, and membranes of the brain was manifest, with effusion into the pericardium and within the skull, the latter causing the head of this child to be half as large again as the healthy one. Drawings and statement of case were forwarded to the Travancore Government at their request.

The other case was that of a microcephalous female child of the seventh month, which at birth gave signs of life, but not sufficient to dilate the lungs on being born. The frontal prominences were not developed, and the parietal bones supplied by a thick membrane which was flattened and shrunk in, like a collapsed indiarubber ball. Brain substance deficient, eyes prominent, otherwise well developed for a seven-months' child. The mother was not allowed to see her child. No cause traceable except shock of fear for safety of youngest boy in early pregnancy. I am glad to state that next year she had a fine healthy female child.

The last case I have to mention is not verified by me, except in its effects. It is as follows:—Towards the end of July a new disease developed and spread like wildfire over India, called “Surukumari,” or sudden death. Many deaths were reported, though I saw none, and many were affected, though the few I saw were evidently *hysteria*.

It took its origin in the following way:—“A woman gave birth to a kid of a goat and a cobra in one. The serpent said, ‘I will bite all the people, and they will die of ‘Surukumari;’ and the kid said, ‘If my bowels be opened, and the contents of my stomach and bowels be taken as medicine, they will recover, and those who despise this will not get rid of the poison.’” Two days afterwards, the complaint began to prevail. A burning sensation is felt at the big toe (where the serpent most usually strikes), passing upwards till symptoms of interference with respiration ensues, and patient dies of asphyxia. The medicine was resorted to with wonderful effect, viz., many, many goats were killed, and no one attacked died, though many reports of dreadful and sudden deaths were circulated. The disease spread from village to village, and city to city, and the last I hear is of its arrival in Calcutta and Bombay. Several official reports of the disease were furnished to Government, viz., by Dr A. Ross, Vellore, etc. The panic was universal, and nearly every one had in his possession goat’s dung, and thousands partook of it, and their faith saved them! I may safely say that my brother missionary, Mr Baylis, and myself were the only ones, as far as I know, hereabouts, who did not, partly or entirely, believe in it. It afforded opportunity for many disgusting rites and sacrifices to devils among the heathen, whilst it also afforded the catechists an opportunity of preaching concerning the efficacy of the atoning blood of the Lamb, which can remove the disease of sin, the effects of the bite of the old serpent, the Devil. The trifling incident hardly need be recorded when we think of six millions or more on the verge of starvation in the Bombay Presidency, whilst Mysore, in Madras Presidency, also is threatened—the same cause as before mentioned, excessive drought. I fear when rain comes cholera may follow in the train of the famine. Then, again, on the Ganges delta, a tidal wave has lately swept no fewer than seventy thousand (later accounts say from one to two hundred thousand) into eternity, and what may now be taking place in Europe we know not. Solemn times these in which we live. May we use them aright, and when “God’s judgments are abroad upon the earth, may the people learn righteousness.”

ARTICLE VIII.—*Over-population — Effects produced by it, and the Remedies proposed.* By F. P. ATKINSON, M.D., late Surgeon St Bartholomew's Hospital, Chatham, and Royal South London Dispensary.

It is a very easy matter to raise the cry of over-population, and it may be comparatively easy to introduce certain checks to the rapid increase of the human race; but it may be very difficult, when once these checks have begun to produce their effect, to prevent them bringing about an evil as great, if not greater, than that they were intended to remedy. It behoves us, therefore, before we have advanced too far, to look carefully on both sides of the question, and see whether, in the case of the population falling off, we are likely, as a nation, to be better or worse off than we are at present. Those who advocate limitation of population say that if certain checks were introduced—(1.) Poverty would be diminished. (2.) Marriage would not be so long delayed. Many a man, they say, at the present time abstains from marriage from calculating, as he is bound to do, what is likely to be the result. And many a married man, scarcely able to meet the wants of his increasing family, is obliged to leave his children at his death dependent upon the tender mercies of the world. They contend that every man should use foresight, and save his offspring that misery and wretchedness to which they are likely to come; though he is not bound to abstain from the obligations which marriage imposes. (3.) Prostitution would be diminished, as well as the spread of phthisis, cancer, syphilis, etc.

Among savage nations the population, they affirm, is kept down by—(1.) Fearfully fatal epidemics and wars. (2.) Infanticide. (3.) Cannibalism. (4.) Wholesale murders. While in Great Britain, owing to sanitary arrangements—(1.) Epidemics are, to a certain extent, warded off, and, upon the whole, are decidedly less dire in their effects. (2.) Phthisis seems to diminish in proportion to the amount of drainage and improvement in household sanitary arrangements. (3.) Wars are less frequent, shorter in duration, and consequently upon the whole less fatal. And hence it would appear that the ordinary checks to increase of population are diminishing, while the produce of the soil (*i.e.*, in proportion to the increase of population) is diminishing also.

Among the artificial checks which they say at the present time exist in English society are—(1.) Prolonged suckling, which often produces serious results. (2.) Delayed marriage. (3.) Prostitution. (4.) Abortion. (5.) Baby-farming (the last three resulting from 2). But these, they admit, are more or less detrimental to health and morality, and as such ought to be entirely discarded; and they say that no check ought to be sanctioned by the world at large, or by medical men in particular, which offends either public taste or is

injurious to health. From this it might be supposed that conjugal chastity at certain periods was implied or advocated, but such is not the case.

The chain of argument, then, adopted by those in favour of the limitation principle, shortly stated, is this:—(1.) Over-population causes distress. (2.) Limit population, and all would find employment and the means of support in their own country. (3.) Misery would be lessened. (4.) Marriage would be more frequent. (5.) Prostitution, abortions, baby-farming, etc., would be almost entirely done away.

Though this argument at first sight seems very plausible, let us carefully consider, whether from the adoption of such a course we could really expect such strikingly beneficial results. To start with, we must ask the question, "What is over-population?" The answer given by most people would be, "A state of things in which the wants of the people are in excess of the produce of the soil." But it appears to me that this definition is scarcely all that could be wished, and a more correct answer would be, "A state of things in which the supply of labour is persistently far in excess of the demand."

America last year sent back many of her emigrants, not because there was a scarcity of food, but because there was not employment enough to enable these men to obtain, by the results of their labour, the necessaries of life. Here then we have emigrants returning from a country which for years to come must be really under-populated (*i.e.*, viewing it in the light of the food that it produces), to a land which is said to over-populated, and has to depend upon other countries for its support. So long as the people of a country can find sufficient employment for their energies, and obtain, even if it be from foreign parts, sufficient for their wants, that country cannot be said to be over-populated.

But, if Great Britain is over-populated, there ought to be certain well-marked results. There ought to be—(1.) A greater amount of poverty amongst the lower classes than formerly. (2.) A higher death rate. (3.) Increasing emigration. (4.) A less amount of independence. Instead of this we find—(1.) Poor law relief diminishing. (2.) A lower death rate. (3.) Less emigration. (4.) Increasing independence amongst the poor; and (5.) Great difficulty in obtaining labourers and army recruits.

Still, admitting for the sake of argument that it is over-populated, let us see what have been, are, or are likely to be the results in some of those countries where the proposed checks to population have been in force.

Take, as an example, France. "What will be the population of France in 1974? Will there be any Frenchmen left? It is a trifle doubtful. The results of the census in 1872 are now published; and as a writer in the *Edinburgh Review* shows—they exhibit a decrease of half a million in 5 years, or 1.29 of the whole popula-

tion. This, be it observed, is exclusive of the million and a half lost by cession of Alsace and Lorraine to Germany. It is a decrease which has occurred in the face of the increase of foreigners by 85,000. It is not due to war or revolution, for it is exhibited all over France, and most conspicuously in peaceful provinces which did not suffer by the ravages of war. It is not ascribable to emigration, for there is little of that goes on in France. The Edinburgh reviewer, analyzing the returns, is confirmed in his idea that the decrease is not to be ascribed to war or the political commotions, by the fact that it appears that the decrease was witnessed both in the case of females as well as males. No doubt the commune cost France many lives; and the reviewer cites a saying of M. Thiers—"En entrant à Paris nous avons enterrés 20,000 cadavres." But the writer is decidedly of opinion that, among the bulk of the people of France, a desire that but few children should be born to each family is uppermost, and that these, together with conscription and celibacy, are at the root of the matter." Compare the colonies founded by France with those planted by Great Britain. See which are the most prosperous, and which are likely to benefit the parent country most. No doubt, in France there is neither the great wealth nor the excessive poverty that one meets with in Great Britain, but it appears to me that the more a country has to depend upon intellectual ability for progress, the more do these extremes occur. Poverty is not necessarily the result of over-population, but it may be due to inferior mental ability, the ability being deficient, entirely absent, or uncalled forth. As an example of this, take Russia. "The mass of the people," says Richard Cobden, in a pamphlet on Russia, published in 1836, "are sunk in poverty, ignorance, and barbarism, scarcely rising above a state of nature, and yet it has been estimated that this country contains more than 750,000 square miles of land, of a quality not inferior to the best portions of Germany, and upon which a population of 200,000,000 might find subsistence.

According to Malte Brun, it appears that in Russia each person pays to the Government, 11s. 8d.; Prussia, 17s. 6d.; France, £1, 8s. 4d.; England, £3, 13s. 4d.; and assuming, as we may safely do, that these Governments draw the utmost possible revenue from their subjects, what a disproportion is there between the wealth of the closely-populated England and the poverty of the scantily-populated Russia. We find, too, that the gradation of wealth is in direct proportion to the density of the inhabitants of the four countries; for, according to Malte Brun, Russia has on each square league 181 persons; Prussia, 792; France, 1063; England, 1457."

But there might be a far greater amount of wealth in the United Kingdom than there now is, for it appears that "the amount of money expended upon intoxicating liquors in 1875 was £142,376,669; and it is the opinion of the best informed in-

dividuals that the cost of the mischiefs resulting from drinking, viz., pauperism, crime, disease, waste of grain, accidents, loss of labour, etc., amounts to fully as much as the cost of the drink itself; and therefore, if the direct and indirect cost of the drink be added together, it will give about £280,000,000 as the amount the nation loses yearly through intoxicating liquors.

In return for such an enormous outlay, we should naturally expect that great advantages and benefits would accrue to the community. The fact of the case, however, is that though the liquor traffic entails a loss to the country's resources of something like £280,000,000, what the nation gets in return for the same is a harvest of misery, destitution, vice, disease, ruin, and death."

According to statistics issued by the United Kingdom Alliance, it would appear that, "if the money paid for intoxicating liquors during the last seven years were added together (£906,463,733) it would pay off our entire national debt, which amounts to £723,514,000, and leave above £183,000,000 to spare.

If the money were applied to the purchase of railways, it would buy the whole of the railways in the United Kingdom (16,082 miles), which cost £588,320,308, and would leave sufficient funds to construct 8500 additional miles of railway.

If the grain and produce which were destroyed in manufacturing the liquor consumed during the seven years had been made into flour and baked into bread, they would have made about 8,000,000,000 4lb.-loaves, which would have supplied bread for the entire population of the United Kingdom for upwards of two years. If the above had been invested in building houses, it would have built a new house for every family in the United Kingdom, and left sufficient money to have built schools to accommodate all the children in the country."

Here then, without question, is a serious evil, producing gigantic, hideous results; and it might be, if this were corrected, we should hear but little of over-population and its sad consequences.

As regards prostitution, I think it may be safely said that it is worse in the chief cities of France than England. Every youth has his *petite maitresse*—*mariages de convenance* are the rule, and the result is that the society of the wife is less sought after than that of other women. The women also, in their turn, cultivate the society of men other than their husbands, and the result of this is just what one might expect—a loose state of morals generally. From what I can learn with regard to the customs of Spain and Italy, it is not thought at all out of the way for a lady to have one lover, besides her husband—in fact, so common has it become, that it appears strange if this rule is deviated from. Again, it would seem that there is more syphilis and a higher death-rate in the large cities of France than in those of

densely-crowded England, and we can learn but little from this to encourage us to hope for good from limiting population. As regards the idea that with a smaller population and greater wealth, marriage would not be so long delayed, let us see how things are with the *upper classes* in our own country. Here the fashion undoubtedly is to put off marriage as long as possible, and for some years, at any rate, to be content with the caresses of a mistress; but, in addition to this, I am unable to learn that marriage takes place at an earlier age in France than in England.

But supposing that it were agreed to put the proposed checks in force, it would be necessary to limit immigration, otherwise those countries containing great natural resources and mineral wealth would still be overcrowded, while others would be nearly deserted. It would also be necessary for all countries to agree to some regular plan for the purpose of limitation, otherwise those nations that did not adopt it might secure, from the perfection and cheapness of their work, the trade of nearly the whole world.

Having now hurriedly passed in review the good results which the advocates of limitation assert would follow the adoption of their views, let us see whether we might not have cause for serious regret if we once listened to what these persons urge, and followed blindfoldedly their suggestions.

For my own part, I cannot but think that the idea of limiting population with a view to providing all with employment and the means of support is a wrong one, for the method of proceeding is simply equivalent to trade-protection, which we know from continued experience to be decidedly disadvantageous. The various trades-unions in the country aim at protecting men by limiting the number of apprentices. In this way they expect that competition will be lessened, and the price of labour raised, but they forget the less the competition, the less perfect the work; and the less perfect the work, the less encouragement will be given to it. Besides, if all obtained a prize in the race, where would be the object of the struggle? Limitation of population means limitation of trade, since man creates work for man. "As a rule, it may be said where over-population and over-competition are complained of, it is simply an excuse for idleness. Men require to be goaded on by want, or they are apt to drop behind in the race of progress. Necessity has always been the mother of invention, and straitened circumstances have been the cause of some of the greatest discoveries. And as necessity has taught us much in science, it may be that we are now about to learn that the greatest pleasure in life is that of helping others. The greatest problem of the present age is how to make the best use of our time, labour, and wealth for the general good, and there can be no question that the rich and poor have yet to learn their proper mutual relations." Cities and countries decay more as the result of luxury and over-indulgence than poverty—*e.g.*, Rome, Carthage, Nineveh, Babylon, Greece, Egypt, Spain, etc.; and it

may be safely asserted that provision for all with little or no work, or great ease in obtaining, would simply end in retrogression and poverty. It is curious to notice that the two most thickly populated countries in Europe are England and Belgium, and these are the most prosperous. Limiting population is equivalent to limiting the means for colonizing foreign countries, as well as the means which small and weak nations have for defending themselves against the strong.

In connexion with this point, I think we may just take a glance at the 24th verse of the 105th Psalm: "And he increased his people greatly and made them stronger than their enemies." It would appear that "the children of Israel went down into Egypt numbering 70 souls. They left Egypt (Exodus xii. 37) numbering 600,000 on foot that were men, and if to this number we add the number of women and children, there must have been 2,000,000 who made the Exodus under Moses. The Book of Numbers i. 46, says, at the numbering of the people on Sinai there were 603,550 males of 20 years old and upwards. The stay in Egypt was between 215 and 430 years. These numbers are accepted by Ewald, the greatest authority in the modern rationalistic school of criticism in Germany."

See what Cobden says with regard to the population question in the pamphlet above named: "The manufacturing districts alone, even the four counties of England, comprising Lancashire, Yorkshire, Cheshire, and Staffordshire, could at any moment, by means of the wealth drawn by the skill and industry of its population from the natural resources of this comparative speck of territory, combat with success the whole of the Russian Empire. Liverpool and Hull with their navies, and Manchester, Leeds, and Birmingham with their capitals, could blockade within the waters of Cronstadt the whole of the Russian marine, and annihilate the commerce of St Petersburg." "With the best of iron and coal," says a writer in *Fraser*, "and our special aptitude for mechanical art, we can defy competition, and multiply indefinitely our mills, furnaces, and ships. We can rely upon our manufactures to supply a population far larger than we have at present. Our exports in 1862 were double those in 1842. Each year opens out new markets to us. Prosperity, though apparently for a time arrested, always returns with a splendid rebound." As regards the soil, we have yet to learn whether we obtain from it the utmost it is capable of yielding. The use of sewage and the chemical treatment of soil is yet in its infancy. There is one very serious aspect which the proposers of limitation would do well to consider. They might be the means of losing us men of the stamp of Arkwright, Watt, Stephenson, Wheatstone, Shakespeare, Newton, Harvey, Hunter, Jenner, etc. See what Cobden says of the first two: "Those illustrious commanders in the war of improvement, Watt and Arkwright, with a band of subalterns—the thousand ingenious and practical discoverers who

have followed in their train—have, with armies of artisans, conferred a power and consequence on England springing from their successive triumphs in the physical sciences and mechanical arts, and wholly independent on territorial increase, compared with which all that she owes to the evanescent exploits of her warrior heroes shrinks into insignificance and obscurity. If we look into futurity and speculate upon the probable result of one of these inventions, may we not with safety predict that the steam-engine, the perfecting of which belongs to our own age, and which is even now exerting an influence in the four quarters of the globe, will at no distant day produce moral and physical changes all over the world of a magnitude and permanency surpassing the effects of all wars and conquests which have convulsed mankind since the beginning of time.”

Admitting that over-population is an evil, and that the proper remedy is to introduce certain checks, it seems to me difficult to ascertain at what period in the formation of new colonies it would be advisable to introduce the limitation principle, because all will admit, I think, that for a certain time, at any rate, the more hands there are the better. There can be no question that after any great pestilence or war, the ban placed upon children would have to be withdrawn to make up for the deficiency created thereby, but it is extremely doubtful whether, when once limitation had been in force, the withdrawal of the restriction would be of any service.

To make a quotation from the same writer in *Fraser* as before: “Equality is the dream of democracy. Inequality is the law of progress. It is the hope of rising above one’s fellow-men which is the great spur to exertion. It is the leisure and means acquired by the accumulation of wealth which alone makes an advance in civilisation possible. When each man acquires his daily bread by means of his manual toil, then all culture is impossible, and all progress suspended. There is no form of art or science which is not needed in the public service of such a country as this, and health and wealth are invaluable helps towards the attainment of excellence in any of these pursuits.” Where over-population really exists, the proper remedy, in my mind, is to encourage emigration to the fullest extent possible; by this means relief would be afforded to the mother-country, while at the same time it would be advantageous for the colonies; and if the following scheme were carried out, some important results might be very quickly produced:—All persons found begging should be taken up and handed over to the parish authorities, and these should be empowered to transport the able-bodied of both sexes to those parts where, by fair industry and perseverance, they might gain sufficient for their own support. The home poor would then consist simply of maimed, halt, blind, etc.

In conclusion, I would say that those who at the present time

are urging limitation are incurring a heavy responsibility, for, under the influence they are exerting, both the morality and the future prosperity of the country is likely to suffer. Their intentions may be good, but the results produced are, as far as one can see, likely to be disastrously bad.

Our neighbours the French have tried, and are still trying, to bring about a state of things which will give them "Liberty, Equality, and Fraternity," but hitherto it has resulted, and in the future also it is likely to result, in nothing but failure. It is an idea which can never assume any shape or proportions—in fact, it is nothing, to my mind, but the dream of an idealistic democrat.

ARTICLE IX.—*Opium in Relation to Population.* By J. DUDGEON, M.D., Pekin.

THE question of opium-smoking as affecting population opens up a new and important subject, and one which has not received much attention from the medical profession. The relation of opium to alcohol as a national stimulant, either as a substitute for or as a substantial addition to our already existing stimulants; its relation also to tobacco, to health and disease, and its physical results generally; to the formation, nature, and power of the habit induced; the power for work which it confers in the first stage, or that of excitement, and its enervating effect in the second stage, or that of depression; the time occupied in the indulgence of the habit; the quantity of the drug daily consumed; the money spent on the pipe, and such like questions, though highly important to social science and the welfare of the individual, the family, and the state, and having more or less of a medical bearing, do not come under the scope of our present paper.

Our present subject is one for the study of which, fortunately, few facilities as yet exist in western countries. It is only in opium-smoking and opium-eating countries where statistics can be collected and inferences drawn.

Chinese testimony and observation, as well as western medical evidence, so far as it goes, agree in declaring that the action of opium on the organs of generation, in moderate doses and for a certain time at least, is distinctly aphrodisiac. The uniform testimony of vast numbers of opium-smokers who have been seen and attended to at the Pekin Hospital, and questioned on this particular point is, that the habit at first increases the sexual desire, that it greatly strengthens the erectile power of the penis, and that it prolongs the orgasm. This action, as explained by the Chinese, is owing either to the general astringent character of the drug, bracing and invigorating the system, and removing the sense of fatigue, or to its contractile action on the particular road or

vessel along which the seminal fluid is supposed to pass. This explanation is in accordance with their theory of separate roads, and of particular medicines passing by these roads to the various viscera. The general Chinese impression is that a well-to-do smoker is able to stimulate the genital organs in this way for a period of about two years, after which time inability to consummate the act follows. Among the poor smokers, it is confined to a few months' indulgence in the drug, producing, of course, speedier and more disastrous results where it is aided by poverty. That the period should be so short may be explained by the fact of the fascinating effect of the drug, seducing by far the largest number of smokers to use more and more of the stimulant, which then tells powerfully and injuriously upon their health. They thus soon become its slaves, and they cannot leave it off without great pain and liability to a fatal attack of dysentery. They therefore go on still increasing the quantity, and are consequently soon dragged down to misery. No form of intemperance is more seducing than the use of opium, nor is there any from which deliverance is more difficult.

This question of the power of opium to largely augment the venereal appetite has had a most important bearing on the origin and widespread extent of the habit among the Chinese. From inquiries made at thousands of smokers, and extending over many years, I have found that a very large percentage of those addicted to the habit commenced it from licentious and lecherous motives. The various estimates received have, of course, as might be expected, differed widely. One old smoker, for example, thoroughly acquainted with his class, gave it as his candid opinion that as many as 60 per cent. commenced the habit with this object; 20 per cent. from motives of sociality, amusement, ennui, etc., or causes similar to those operating in our own country in the origination of spirit-drinking; and 10 to 20 per cent. for the cure of disease or alleviation of pain. On the other hand, my own Chinese teacher, formerly an official, and an opium-smoker, and who laid claim to a knowledge of medicine, and thoroughly competent to form an opinion, declared that really not more than 1 per cent. took to it on the advice of friends or the native faculty for the cure of disease or the alleviation of the pain of incurable maladies; that 70 per cent. began it from having little or nothing to do, and the drug formed an easy, comfortable, and, at first at least, an enjoyable mode of passing the time, and that about 30 per cent. took to the pipe for sexual reasons. It is quite easy to understand how many should ascribe their reason for first having recourse to the pipe to cure disease and remove and allay pain, and after acquiring the habit—a matter of easy and speedy accomplishment—finding it next to impossible to throw off the yoke. We have only to remember that the law of the land against indulgence in the drug is, and to all appearance must ever remain, unrepealed; that the conscience

and moral feeling of the people, and even of the smokers themselves, is condemnatory of the practice, and that thus a virtue is made of necessity, and sympathy and consideration is more likely to be extended to such as have been driven by pain or want of skill of the native doctors to addiction to the opium pipe. We may safely, I think, at the very lowest estimate, place the number of smokers who have taken to the "foreign dirt" to excite their sexual passion at 20 or 30 per cent. This does not, of course, modify or alter the result. Opium, like intoxicants in our own country, is both the cause and the effect of much licentiousness and immorality. That such a cause should operate very largely in China is evident when we reflect upon the sensual nature of the people, their very early marriages, the existence of polygamy, and their almost insane desire for sons, to hand down their names and to worship at their tombs. On the other hand, it might be supposed, bearing in mind the strong and certain tendency of opium to produce impotency and sterility, of which they cannot now be altogether ignorant, that the use of opium never could become an article of very general consumption. This infatuation can only be explained by the power which the habit gains, by the force of evil example, by the desire for ease and comfort so characteristic of the lymphatic Chinese, and for the experience of renewed youth and perfect enjoyment which the pipe is known to give, although, of course, only for a time, and sometimes rendered necessary or advisable by former or early excesses, and, above all, by the indifference engendered by the drug. In order to appease his insatiable craving, there is no enormity to which the confirmed smoker will not stoop, even to the selling of his wife and daughters to slavery, if not to a worse fate, which is not of unfrequent occurrence. The fly seeks the light regardless of the flame, and the fish covets the bait but forgets the hook, are common Chinese proverbs that express this mental condition of the opium-smoker.

So strong, however, is the desire for sons, and for the cure or prevention of impotency and the conservation or increase of sexual energy, that the Chinese materia medica and dietetic works generally, take notice of substances according as they are supposed to possess these qualities. The peculiar potency of opium in increasing the virile power is well known. I have been frequently consulted by confirmed smokers of all classes for remedies against impotence. Many of them have been wealthy people, apparently in fair health, and not beyond forty years of age, who would have given nearly all they possessed to have recovered the use of the sexual organ. The chief complaints have been want of erectile power, atrophy of the organ, and of its retraction under the pubic arch, which lend countenance to the idea that this sad result was not owing to general debility of the system caused by confirmed indulgence in the drug so much as to direct effect upon the organs of generation. Most reliance is placed in the great herbal of the Chinese on hartshorn and ginseng, for the

cure of impotency and the promotion of sexual desire and power. The latter substance is the most highly appreciated of all medicaments from its supposed resemblance to the Chinese character for *man* (a trunk or stem and two roots or limbs), which the word ginseng signifies. Camphor is well known to possess the very opposite properties, and hence clothes that have been kept in camphor are thoroughly well aired before being again worn.

I knew two wealthy brothers, both confirmed opium-smokers, the elder a poor enfeebled creature, now dead, and both without families, after becoming confirmed in the use of the drug, who had possessed themselves of electro-galvanic apparatus in order to stimulate the sexual organs, and, if possible, to re-acquire their lost virile power.

Chinese testimony is equally uniform in regard to the impotence in the male and sterility in the female resulting from the long-continued use of opium. The venereal appetite is very soon impaired or completely destroyed, or where the desire remains to any extent, the power to consummate the act is gone. The milk secretion is also impaired, the catamenia slowly arrested, and barrenness is a very frequent result. I do not say positively that the confirmed use of opium is *directly* anaphrodisiac, but certainly it appears to become so at least *indirectly*, by lowering the whole tone of the constitution. The Chinese affirm that an opium-smoker's family becomes extinct in the third generation. Although smokers in good circumstances may have families, yet such is not the rule. They become impotent at a much earlier period than others; if they have begun the habit at 20 or 25 years of age, and smoked say three or four mace per diem, they will retain little if any power after 40. If children are born to such smokers, they will be found to be sickly, weak, stunted, and that they die off early, or are very difficult to rear, and do not live to an advanced age; and if they marry, that they become sterile, and die out frequently in the second, and almost invariably in the third generation. Miscarriages, too, are excessively frequent among the women of this class. The table of cases which we append seems clearly to bring out these and other points.

Besides Chinese testimony on this point, we have the following medical evidence:—

Dr Little of Singapore, in an article on Opium, in the *Journal of the Indian Archipelago* (1838), says, "During the course of my investigations, I found that the continued use of opium diminished the venereal appetite in both sexes; in some men the desire remains, but the power of fulfilling the act is gone." He gives the following short table, not constructed from women of abandoned character, by which it will be seen that out of twelve, six had no children subsequent to the use of opium; one has no children either before or after; one has no children before commencing, but subsequently four, because coeval with her marriage was the commencement of the vice. He adds, "It is difficult for a writer on

this subject to convey to his readers such a mass of facts as to compel him who reads to believe, but it is much more difficult for one who has investigated the subject to withstand being convinced that the long-continued abuse of opium deprives man of the power of fulfilling the chief purposes of marriage—the continuation of the species.”

CLASS. Chinese.		No. of Children born before using Opium.	No. born subsequent to the use of Opium.
1	All under 30 years of Age, . . .	2	None.
1		1	None.
2		2	None.
1		3	None.
1		1	1
1		None.	Four, 3 died.
1		None.	None.
Malays.			
1	Under 30 years of Age, . . .	1	1
1		1	None.
1		1	None.
1		2	1
1		1	1

Dr Oppenheim, in his work on the state of medicine in Turkey, says, regarding the opium-eater, “his mental and bodily powers are destroyed, he is impotent.” Dr Johnston, in the *Twenty-sixth Annual Report of the Chinese Hospital, Shanghai*, remarks, “The testimony of intelligent smokers as to the influence of the drug in the sexual appetite, is that in the earlier stages, when very little is smoked, it excites desire; later on, when the system becomes enfeebled from excessive use of opium, impotence results. Women, too, who become confirmed opium-smokers, are, as a rule, barren.” Mr Porter Smith, late of Hankow, in one of his hospital reports, remarks, “Extensive inquiries have proved that the impotency so constantly affirmed to be one of the consequences of opium-smoking has not been observed, except in the case of very inveterate consumers of the prepared drug.” Dr Woodward, in the *Boston Medical Journal*, vol. lxx. p. 158, “On the Action of Opium on the Genito-urinary Organs,” says, he “has found that among opium-eaters, both male and female, the sexual desire becomes almost extinct, while he has prescribed it with good effect in persons suffering from lustful propensities.”

There may be those, in view of such physiological results, and the increasing growth and consumption of opium in China, who believe that in this drug they see the agent for the diminution or extinction of the Chinese race. If our deductions be true, the question has also important bearings for ourselves, in view of the increasing yearly consumption of crude opium and its tincture in the form of

laudanum, of which there is unfortunately only too much evidence. If it go on increasing in the years to come, in proportion to the last decade, it must very soon attract the attention of our profession and of our legislators. Both in Great Britain and the United States, opium consumption in our large manufacturing centres is becoming an important item. Our annual import of it is steadily increasing, and is now about 400,000 lbs. In 1843 it was not 50,000 lbs. It is the uniform testimony of some chemists and druggists in England and Scotland, whom I have consulted, that large orders for opium are now executed, where before the trade in the drug was comparatively trifling; that a regular class of opium-eaters and laudanum-drinkers exists in all our cities and towns, who frequent the druggist shops daily, and purchase the regular quantity of *that* or *yon*, or, in most cases, they are supplied without making any remark. They are known as regular customers, and their general appearance tells the errand upon which they have come. They belong to both sexes. In one family in Glasgow, it is regularly put on the table on the removal of the cloth after dinner. Very serious results, therefore, may be anticipated from the widespread use of the drug. The following sentence is from a clever leader on our opium trade in one of our China newspapers:—"That opium is effectual in preventing the increase of population, is a fact often lamented by its opponents, but that such artificial checks are an unmixed evil is more than, in the face of history, we are prepared to hold. So long as China is governed as she has been, opium-smoking or devastating rebellions are the only possible means of getting rid of a uselessly redundant population. The well-known effects of the former in preventing its victims from procreating their kind checks the hereditary transmission of the vice." What if the spread of the pernicious drug among ourselves be one of God's ways for avenging our persistent affront to his eternal laws of justice by our selfish support of the opium trade—sacrificing honour, justice, humanity, and Christianity at the shrine of gold. The depopulating effects of opium are, of course, not so patent as they will and must become, if our supposition be true. In the great bulk of the twenty or thirty millions of supposed smokers in China the habit is still confined to the first generation, and to a limited extent to the second generation. Its results exhibited in the third generation, although few in comparison with either the first or second generation, are yet amply sufficient to warrant the Chinese verdict regarding it. On the other hand, it may be said that, as the Chinese marry remarkably early, a large number of children will be born before the parent or parents either begin the use of the drug or have become confirmed in its use. This is doubtless true; still the vile habit is gradually permeating all classes and ages, and the very youngest are beginning to indulge in the drug. This is particularly true in the districts—and these are increasing, and involve

large portions of nearly the half of China's eighteen provinces, and in two or three provinces of the West and North-West, the larger portion of the entire province—where the poppy is now grown, and where the percentage of smokers to the whole population is estimated by various travellers, very competent to form a correct judgment, at from 40 to 60 per cent., including men, women, and in many cases of children above twelve years of age. I myself heard of a child not yet entered its teens, taking the pipe after his father had laid it down. The rampant poverty which follows its indulgence among the middle and lower classes, and its deleterious effects on the constitution, may lead us to believe that in a generation or two more the fact of its depopulating character may be self-evident.

The following are the notes of 48 cases taken at random during the month of October 1871 at the Pekin Hospital. The cases are those of patients who presented themselves at the dispensary for various surgical and medical diseases. The treatment of opium smokers for the cure of the habit is carried on by the hospital in a separate department. I append this list without further note than was taken down at the time in the case-book. I leave the reader to ponder the figures; to observe the ages of the children born subsequent to acquiring the habit, and to note, unless otherwise stated, that the persons herein named were ordinarily healthy, and their wives within the child-bearing period. The facts were elicited without the objects of the questioner being known, it being considered quite respectful, nay polite, to make minute inquiries into their family matters, relations, and progeny. The statements were therefore received without any bias, and may be candidly accepted. And they are not selected cases, as will be observed. To make the figures correspond more accurately with ours, it would be necessary to subtract 1 from the ages and the number of years in which the drug was smoked:—

1. Shen, aged 40, has smoked for fifteen years, at first two mace, latterly six candareen, and has no children since beginning the habit—no information in regard to previous births.

2. Shen, a brass-worker, a native of the province of Shansi, 33 years of age, has smoked for fifteen years one mace daily; he had three children born to him before beginning the habit, and one since, at present 9 years of age.

3. Li, a native of the province of Chihli, at a place sixty Chinese miles S.W. of Pekin, has no business, is 38 years of age; has smoked eleven years, at first three mace, and latterly one mace. He has had two wives, and was married at 16; has one daughter still alive; by the second wife he has had no children, though married ten years.

4. Tai, a native of Shantung, aged 40; has smoked for four years one mace daily; has been married nine years, and two children were born, one two years, and the other five years after his marriage.

5. Li, a mandarin-follower in Chihli, is 29 years of age, and has smoked ten years, at first three or four mace, finally, through straitened circumstances, one mace; has been married twelve years, and has no children. His father died at 54 years of age, having smoked thirty years, at first about two mace, latterly one mace. He has one sister aged 33, married eighteen years, and has also no family. This is an interesting and instructive case—the family destined to become extinct in the second generation.

Note.—The quantity of opium is sometimes reduced from reduced circumstances, in which cases the ashes (sometimes mixed with a little crude opium, or more frequently alone, and after they have been smoked over and over again, with new additions of the prepared article) are swallowed. In some cases the reduction has been made from a feeling that it is doing them harm, and a desire to keep within a moderate quantity, or with the view of paving the way for giving it up entirely.

6. Li, aged 49, a native of Shansi, has smoked for twenty-four years, at first 2 or 3 mace, latterly $1\frac{1}{4}$ mace, has three sons and one daughter, one son dead; youngest son is 5 years old; their ages are 26, 19, and 9 respectively. He looks 60; his eldest son has been married eleven years and no family; the second son, married three years, also no family; has one nephew who has smoked thirty years, and who has had *one* child, now dead; another nephew has smoked four years, and has two children. This is another most instructive case—a family apparently about to become extinct in the second generation.

7. Tang, a native of Shantung, 46 years of age, has smoked ten years two mace daily; married twenty-five years; has one son 20 years old.

8. Li, 48 years old, has smoked twenty years two mace daily; has been married thirty-one years; husband dead five years; four children born; two miscarriages, eldest born one year after marriage; youngest if alive would now be 17 years old—all dead. An interesting case.

9. Chang, a Christian, a native of Shansi, has smoked for fourteen years, has two sons 26 and 16 years old respectively—one child died fourteen years ago.

10. Chen, 31 years of age, smoked six mace at first, and latterly seven or eight candareens; married seven years; two children, one dead, lived 5 years, the other 3 years old, still at the breast.

11. Kwei, a bannerman, aged 33, has smoked ten years one mace daily; married eleven years; one son if alive would now be 6 years old; died at 4 years of age.

12. Twan, aged 48, has smoked ten years, two mace; married twenty-six years; has one daughter 24 years old.

13. Teh, aged 48, has smoked twenty-five years, three mace; looks 60; youngest child 21 years of age.

14. Chung, 37 years of age, smoked seventeen years, at first three

mace, latterly one mace; has had five children, all dead, except youngest alive, and now 4 years old; the four died all in youth; appearance aged and emaciated; gave up the use of opium for five years.

15. Wang, a native of Shantung, 36 years old, has smoked thirteen years at the rate of four mace daily; has been married fourteen years. First wife dead; had four children; second wife married five years; two children 5 and 2 years of age respectively—man healthy-looking.

16. Fu, 27 years old; smoked two years, one mace; married five years, had two children before beginning to smoke, both children dead; first lived forty days, second only four days; at present has a daughter four months old—father strong-looking.

17. Han, 50 years of age, has smoked thirty-three years, four mace, but for the last two years one mace daily; has had eight children, all dead, and seven or eight miscarriages.

18. Sheng has smoked ten years, one mace daily; he has been married fourteen years, and has four children, two before beginning the habit and two since; the latter two both died within a month of convulsions.

19. Wang, smoked ten years, two mace; married fourteen years, four children; two born before and two since he began to smoke; the latter two both died within a month of convulsions.

20. Chiven has smoked ten years also, one mace daily, and has been married seventeen years, has one child 12 years old. He is a bannerman (a Manchu soldier or pensioner who does military duty in the palace at Peking).

21. Yneh, 53 years old, has smoked fourteen years, two mace; married thirty-two years; has one son 27 years old; has a second wife who has also smoked for six years; no family, menses irregular. Has attempted five or six times to get cured, but always relapses.

22. Li is 42 years of age, has smoked fourteen years two mace daily at first, and latterly he has reduced it by a half; married twenty-four years; one girl died at 4 years old, would now be 18 if alive; there have been two miscarriages since taking to the pipe.

23. Li is 36 years old, and has smoked ten years; has two children, 11 and 9 years of age respectively.

24. Hsiang, 40 years of age, has smoked eleven years, one mace, latterly $1\frac{1}{2}$ mace (the rule is to increase the dose); has two children 12 and 15 years of age respectively. His wife is 37 years old.

25. Wang, 36 years old, has smoked sixteen years; has been married thirteen years, and had one boy—dead.

26. Ho, 29 years of age, smoked seven years two mace daily; has three children, the youngest 6 years old.

27. Hwang is 38 years old, has smoked eight years; has three children, youngest 7 years old.

28. Wang, 53 years of age, smoked sixteen years, at first three mace, latterly one mace; has one child 21 years old.

29. Liew, 48 years old, smoked twenty-six years, two mace ; one child 20 years of age.

30. Chau, 31 years old, has smoked fifteen years three mace daily ; married four years—no children.

31. Yen, 46 years old, has smoked twenty-two years four mace daily, latterly he has reduced it to three mace ; has had six children, three born before acquiring the habit, and three subsequently—the youngest is 14 years old.

32. Tu, 60 years old, smoked ten years two mace daily ; has had one child before taking to the pipe, and none since.

33. Hsiang, 37 years of age, smoked ten years, two mace ; had two before acquiring the habit, and none subsequently.

34. Chu, 43 years of age, a Christian, and formerly mandarin-follower, smoked eighteen years, three mace, latterly one mace ; has had three wives. First wife married five years—no family ; second wife married six years—no family ; third wife married six years, has had three children, the first two dead ; has given up opium for the last four or five years ; looks healthy and vigorous—an instructive case.

35. Yang, 51 years old, has smoked forty years, four mace at first, and latterly only one mace ; has one boy, three dead.

36. Chu, 47 years old, has smoked twenty-five years, four mace, and latterly only two mace ; married eight years when his wife died—no children. The first seven years he smoked four mace, and the remainder two mace ; his eyes are very bright, pupils very contracted, and has a sallow yellow complexion.

37. To, 54 years old, has smoked thirty years, four mace daily for the last four years ; has two children ; his wife is 48, eldest (son) 27, daughter 12. His bowels are open every morning on awakening, the semen passes involuntarily ; has lost all erectile power.

Note.—As a rule smokers appease the appetite twice daily, morning and evening, after meals ; thrice daily is, however, not uncommon, and still more frequently rare, except among old wealthy smokers, who pass nearly all their time at the pipe, and turn night into day. The periodic return of the craving is supposed to be caused by the viscera having received a coating of the opium smoke ; in short, that the smoke has condensed into soot, and covers the various organs. Effective remedies are therefore sometimes called *the brass brushing opium habit elixir*. The Chinese have the idea that once cured they cannot return to the pipe without imperilling life. Constipation of the most inveterate kind is the rule—often not more than one or two stools per mensem, when diarrhœa or dysentery sets in—often incurable. When the system gets very enfeebled by the opium, diarrhœa not uncommon ; opium then does not prove astringent, and cannot be relied on as a remedy. All opium-smokers dread diarrhœa, as other conditions of No. 37 are, alas ! only too common.

38. Lien, 28 years old, smoked eight years, three mace; married ten years; has one daughter 9 years old.

39. Mau, 29 years of age, smoked eight years, three mace; married ten years; one child 5 years of age; the habit not strong; says he can take more or less, or leave it alone for a day or two. An uncommon case—the habit as a rule is so imperious that it must be attended to at the regular period. It is said that the habit acquired by the use of native-grown opium is not so difficult to overcome as that produced by our Indian drug.

40. Han, 54 years old, has smoked twenty-nine years, latterly one mace only; has had ten children; nine died in youth, one alive six years old by a second wife; he is very feeble and aged-looking.

41. Chao, 38 years of age, has smoked seven years, at first two mace, latterly one mace; married twenty-five years; has three sons alive, youngest 10 years, had three children who died at one or two years old within the last three years.

42. Chao, 54 years of age, has smoked thirty-two years, three mace, latterly one mace; has one son 21 years old, has had no more; his wife is 36.

43. Tung, 41 years old, has smoked eleven years, maximum at first five candareens, latterly reduced to two candareens; has two children, one died at 1 year old, one a few months old of jaundice; the youngest if alive would now be 5 years old, the elder 7 years; he gave up opium, his right eye became inflamed, the cornea sloughed, he expectorated, defecated, and voided blood.

Note.—I have seen two cases of glaucoma apparently caused by the cessation of the habit; in one case the eye was completely lost, in the other impaired vision was restored by again having recourse to the pipe. I have not seen a sufficient number of cases of this sort to warrant any inference.

44. —? is 45 years of age, has smoked twenty years, his maximum reached two mace, but latterly he has been content with three candareens; has two daughters, eldest 25, youngest dead.

45. Hsing, 49 years old, smoked eleven years; wife 42 years old; five children, all dead; the youngest lived only a few days, if alive would now be 7 years old.

46. Meng, 52 years old, has smoked thirty-six years; he reached three mace, but dropped down eventually to two mace; has had five children, the last two dead; the youngest if alive would now be 13, the youngest living is 26 years old; the father looks much older than he states, and complains of fluttering of the heart, with cold extremities.

47. U, 49 years old, has smoked thirty years, three mace; husband of No. 48.

48. U, 40 years old, has smoked nineteen years, two mace; catamenia irregular for six years, a little only every two or three months; two children, one son died at 2 years of age, if alive would now be 19; one daughter alive 16 years of age.

One mace of prepared opium costs about 4d.; the wages of labourers and tradesmen range from 8d. to 1s.; the masters usually feed their workmen at the rate of 6d. per diem; the remainder goes to the family, leaving barely enough for the absolute necessities of life, and certainly nothing for a vicious indulgence; and yet opium-smokers frequently consume a quarter or half of their wages. The amount smoked not uncommonly amounts to or even exceeds the entire sum of wages, and it is staggering sometimes to learn how long this has proceeded. Everything will be disposed of—pawned; for a short time credit may be got at the rice-shop; friends and neighbours have their fountain of liberality and charity completely exhausted; the ashes or scrapings from the pipes of well-to-do smokers are implored or are given in charity, and when all these things fail, the smoker will sometimes start a brothel, and rents out his wife and daughters for purposes of prostitution, or he steals and robs to satisfy his inordinate craving.

One mace is equal to about one drachm. One candareen is equal to one-tenth of a mace.

Part Second.

REVIEWS.

Reports in Operative Surgery. By R. G. BUTCHER, M.D., F.R.C.S.I., Lecturer on Operative and Practical Surgery at Sir Patrick Dun's Hospital.

WE have formerly on several occasions noticed favourably the valuable Reports in Operative Surgery which Dr Butcher has brought under the notice of the profession, more especially his late paper on a case of Refracture for Deformity in a case of badly united fracture of the femur.

The present, like all Dr Butcher's reports and clinical cases, gives evidence not only of the operative skill which was to be expected from a surgeon of Dr Butcher's well-earned reputation, but exhibits an amount of care and attention to the minutest details of the after-treatment which are well worthy of the consideration and imitation of younger surgeons. The cases are very graphically described, and profusely illustrated by beautiful lithographs from photographs of the patients before and after the operations.

The Report embraces cases of excision of the elbow-joint—removal of a large cervico-facial tumour—complicated harelip—ununited fracture, and a case of extensive fracture of the base of skull treated successfully. Our limits prevent us doing more than glancing at some of them.

To us, in this city, where excision of the elbow-joint has been so long established as the almost invariable operative procedure in disease of that joint, and where amputation is scarcely ever resorted to for such disease, it at first sight seemed almost strange that Dr Butcher should have taken the trouble to elaborate these cases of excision of the elbow, and dwell upon the propriety of the operation in similar cases in which the state of the soft parts give the diseased limb a formidable appearance; but if, as stated in the report of Captain ——'s case, amputation of the arm had been recommended by a London surgeon, this shows the necessity of reiterating what may seem acknowledged and obvious principles. Exceptional cases no doubt occur, in which, owing to the state of the health and involvement of other organs, amputation may be preferable to excision, but when the diseased condition is entirely localized and limited to the articular extremities of the bones, amputation is not warranted; in our own practice, out of a very large number of cases of elbow-joint disease treated and operated on, amputation of the arm has only been performed thrice. The method of operating by the H incision adopted by Dr Butcher is certainly inferior, in our opinion, to the long single longitudinal incision, which is not only attended with less disturbance of the connexions of the muscles around the joint, but also admits of passive motion being commenced early. The admirable results exhibited in Dr Butcher's cases show, we think, rather what may be effected under disadvantage by great care and skill, than what would be the general result of that method of operating.

The case of a successful removal of a large cervico-facial tumour is perhaps the most interesting of the present series of Dr Butcher's Reports.

The tumour in this case, originally of slow growth, had at last attained formidable dimensions, and from the description and illustrations, seems to have occupied the whole parotid and upper and anterior cervical regions, insinuating its lobules deeply amongst important structures, and yet admitted of complete removal by a carefully conducted operation; and the result was most satisfactory. We could have wished Dr Butcher had dwelt more upon the importance of the diagnosis as to the character of such tumours in reference to operation. At no very distant date we can recollect it being laid down as a rule by some surgical authorities that tumours situated under the sterno-mastoid should not be interfered with, and in a consultation on an enormous cervical tumour, we were referred to cases in which very eminent operators had been obliged to desist in attempts to remove such growths entire. But the cases referred to were evidently malignant growths in which there is almost never true definition, whilst simple tumours are clearly defined; and though their prolongations and relations to important structures are often close and require careful dissection, they never involve these structures. In the case alluded to, we decided

to operate, trusting to the originally simple character of the growth, and removed it with complete success. Since then we have operated on other similar tumours with equal success. But the case is different with malignant tumours, for not only are we never sure whether vital structures may not be implicated, but even when the tumours are removed, the results are unfavourable. In two cases in which we have departed from this principle with a view of giving a chance to the patient, though the growths were removed without injury to important structures, both patients died; one from sudden œdema glottidis, the other from unhealthy sup-puration amongst the tissues of the neck. These may seem to some accidental complications, but the kind of dissection and manipulation in these cases is very different from the operative procedure in the non-malignant growths, to say nothing of the cachectic state of the constitution tending to unhealthy action.

We would willingly have entered upon the other cases: the strange case of operation for harelip in mother and child, so graphically illustrated, both as regards the deformities and their successful treatment, the cases of ununited fracture, and fracture of the base of the skull,—all cases of great interest, and showing great skill and management in the treatment; but we think we have said enough to commend Dr Butcher's work to thoughtful perusal to those interested in surgery. The work is most beautifully got up, both as to printing and the artistic character of the illustrations.

Traitement Rationnel des Plaies: Méthode d'Aération. Rapport de la Commission Spéciale du Traitement des Plaies à la Société de Chirurgie de Moscou. 10 Janvier 1877.

THE treatment of wounds is one of the most fashionable subjects of discussion at the present time, and for the Russians looking forward to the mobilization of their army, and to a great war, it was then of a very vital interest. This pamphlet is the outcome of their deliberations; and it is a very clever, reasonable, and seasonable contribution to the subject. After a very careful and exhaustive examination of the arguments *pro* and *con*, and the results obtained by other modes of treatment, including the "pansement de Lister," the Society have unanimously recommended a method of treatment of wounds diametrically opposed in principle to that of Lister.

The spray and its results are carefully discussed, and Billroth's opinion is quoted,¹ that its use or absence makes no difference in the rapidity of putrefaction, while its inconveniences are great, and it tends to cause an immense effusion of serum from the wound.

After a consideration of the strange enigma which the genius of the West has not been able to solve, implied in the equally satis-

¹ Langenbeck's *Archiv*, Bd. xx.

factory results of the "Burow-Rose" plan of treatment, in which the wound is left quite open, and the Lister method in which it is so carefully protected, our Russian *savants* find the explanations in the theory, that the Lister method is the least objectionable form of the objectionable bandages.

The Russian plan is not very new, nor very strange to us—catgut ligatures, wire sutures, some deep and some superficial, freest possible drainage, and plaister, with weight and pulley to support the flaps if in an amputation, and no dressing of any kind.

Granulating wounds are to be left freely exposed to the air, merely protected by a cage of iron wire from any contact with bedclothes.

The pamphlet is interesting, well written, and is a good illustration of the too often forgotten fact, that wounds have a natural tendency to heal if they get the chance, and that success depends less on methods of dressings than we are apt to think; but that if a wound be well drained, free from tension, and left at peace, it will get well whatever dressing be applied, or in the absence of any.

Report on the Transport of Sick and Wounded by Pack Animals.

By GEORGE A. OTIS, Assistant-Surgeon U. S. Army. 4to.
Pp. 32.

By the courtesy and liberality of the American Government, we have received a copy of this most exhaustive monograph on a very interesting subject. It contains drawings of many of the modes of utilizing horses, mules, and comrades, for the transport of the wounded. It is historical and suggestive rather than dogmatic, gives many modes without saying with precision which is the best; and, unlike the works of Longmore or Moffit, would be absolutely useless to drill from. It will help an inventive and original officer, it would only puzzle a precise and highly-trained soldier. Still, as affording data and information, especially on unusual methods devised for out-of-the-way places, it is both interesting and useful.

Transactions of the Medical and Physical Society of Bombay.
No. XII. New Series for the year 1876.

Abstract of the Proceedings of Grant College Medical Society, Bombay, for the years 1875 and 1876.

We gladly welcome the twenty-second¹ volume of the Transactions of the Medical and Physical Society of Bombay.

¹ There are ten volumes of the First Series.

Associations formed for the interchange of thought and the ready record of facts and opinions are necessary for the steady progress of science in all countries, especially so of medicine in India. There the succession of inquirers is so frequent, that without some means of this kind the work of the day might be forgotten on the morrow, and hence the importance not only of publishing the Transactions of Societies, but also of methodically distributing them to established libraries both in India and in Europe. The latter object becomes very requisite and useful when it is remembered that, from difference of climate and of season, varieties of race and conditions of society, the field of observation of disease in India, compared with that of most other countries, is unusually extensive and varied, and is, moreover, suggestive of facts in pathology, etiology, and treatment, not, we believe, sufficiently recognised in Europe. Take, for example, the great variety of diathesis, and the influence which it undoubtedly exercises on the pathology and treatment of all forms of disease, both specific and ordinary; and yet it may be questioned whether there is any British book on practical medicine in which this principle, so familiar to the experienced physician in India, is distinctly recognised and inculcated.

It may be gathered from the published proceedings of Indian Medical Societies, that efforts have at different times been made to place their Transactions in the principal medical libraries of the United Kingdom, but these have been fitful and uncertain, and we doubt whether a complete series of the Transactions of the Calcutta and Bombay Medical Societies exists in any public library in this country. As the advantage to the societies and to the libraries is mutual, it would surely be well, by combined action, to supply the deficiency as regards the past, and to prevent it in the future.

Before proceeding to notice the works now before us, a few words of preface on the history of Indian Medical Societies may be expedient.

The Medical and Physical Society of Calcutta was established in 1823, terminated in 1839, and left much valuable work,¹ with the memory of distinguished professional zeal and attainments, as a legacy to Indian medicine.

In November 1835, the Medical and Physical Society of Bombay was formed on the model of that of Calcutta, at the suggestion of Sir Robert Grant, at the time Governor of the Presidency, with the object, in addition to the cultivation of science, of promoting the medical education of the natives of Western India. From 1837 to 1844 inclusive, a volume of Transactions was published annually, from 1845 to 1858 biennially, and again from 1859 to 1862 annually. There was then an interval of seven years without publication, when, consequent apparently on an inquiry by the Secretary of State, the publication of Transactions recommenced,

¹ The publications of this Society were, eight volumes of transactions, two of medical selections, and six numbers of a quarterly journal.

and continued annually from 1869 to 1872; and now, after another interval, the volume for 1876 has appeared.

The Bombay Society has, throughout its course, received the cordial and liberal support of the Government, and of the official heads of the Medical Department; and an idea may be formed of the extent and scope of its operations when it is mentioned that the sketch of sanitary progress in the Bombay Presidency, from 1830 to 1860, published in the Sanitary Report of the India Office for 1869, consists almost exclusively of a methodised summary of the first seventeen volumes of the Transactions.

The volume of 368 pages now before us is in character very similar to those which have preceded it, and ranges over a wide field both in medicine and surgery. Reports on Cholera as it occurred at Nassick and Dhulia in 1875, by Surgeons G. Cody and G. Bainbridge, and of Plague in Turkish Arabia in 1875, by Surgeon-Major W. H. Colvill, are valuable additions to the records of these important diseases. Subjects of interest in pathology and practical medicine are brought under notice in papers on the treatment of salivation by Belladonna, and on the diminished elimination of Urea in Hepatic abscess, by Dr Henry Cook; in the Medical Report of Jamsetjee Jejeebhoy Hospital for 1874-75, and in Notes on the treatment of Cholera by hypodermic injections of Chloral-Hydrate, by Dr W. G. Hunter; and also in the Report of the Civil Hospital at Aden for 1874-75, by Dr W. Nolan. The Medical Topography of Muscat is described by Surgeon C. P. Peters; and the incidents of a journey from Bushire to Kazeroon are narrated by Surgeon George Waters.

In the Report of the Chemical Analyser to Government, Surgeon W. Gray, for 1874-75, there is an account of 295 medico-legal cases transmitted for opinion; of these, 103 were of poisoning, and 54 of them by arsenic. In connexion with these latter cases, there is a review of the strictly scientific aspects of the attempt to poison the Resident at Baroda, which led to the judicial inquiry, and its results, which must be still fresh in the recollection of our readers.

Mr G. Bainbridge, Civil Surgeon of Dhulia, narrates his experience in Lithotomy between January 1868 and July 1875. He operated in 169 cases, with four deaths. He thus concludes his report:—"I would remark that I have never declined to operate in a single case of stone; and when I have, against the wishes of the patients or their friends, attempted to defer operating until a more favourable condition of health were attained, it has been always more with a view to avoiding any appearance of precipitancy on my part than with a hope of improving the sufferer's state, which it is almost impossible to do in advanced cases. I attribute my success more to the favourable non-inflammatory condition of my patients' health, rather than to the care which I have always observed in the performance of my operations. As

regards previous or after treatment, I may say that it has been practically *nil*; the operation was usually performed on the day after admission, and water-dressing was almost the sole remedy used subsequently."

Surgeon Holmstead, the Civil Surgeon of Hyderabad, in Scinde, in his *Medical and Surgical Jottings* from 1873 to 1875, gives his cases of lithotomy during that period as 167, with 22 deaths, chiefly in old persons—no child died. Of the fatal cases he observes, "Many of the cases that died were very unfavourable cases for operation, but coming to the hospital for the express purpose of having the stone extracted, I seldom refuse. The poor creatures are tired of their present mode of living, and would sooner die than continue it, and some cases do unexpectedly pull through."

The volume concludes with an abstract of the proceedings of the monthly meetings for four years, which briefly refers to many subjects of interest, but which, from want of space, we are unable further to notice.

GRANT COLLEGE MEDICAL SOCIETY, whose proceedings for 1875 and 1876 are also before us, originated in the following manner:—After an inquiry conducted by the desire of the Government of Bombay, the Committee of the Medical and Physical Society reported on the expediency of establishing a Native Medical School, and, after preliminary arrangements, the requisite buildings were completed, and Grant Medical College was opened in 1846. In 1851, the commencement of a class of native graduates in medicine had been formed, and with the view of developing and maintaining amongst them a spirit of scientific co-operation and of friendly professional intercourse, Grant College Medical Society was instituted. Membership was, in the first instance, restricted to the professors and graduates of Indian medical colleges; and monthly meetings, with an annual retrospective address by the president, have been regularly held. During the first thirteen years abstracts of the proceedings of the meetings, and of some of the papers, were published. The subjects were numerous, and related to questions of interest in medicine, surgery, midwifery, etiology, indigenous materia medica, and the customs and habits of the people in the island of Bombay, and several of the provincial towns of the Presidency, the results of observation in private and in hospital and dispensary practice. The papers were not confined to a select few, but were contributed by a large proportion of the members. From 1865 to 1875, publication of the abstract of proceedings ceased; but it has been again resumed, and the report just received leads us to augur favourably of the future progress of this very useful institution. The president, Dr W. G. Hunter, Principal of Grant College, in his retrospective address in February last, at the close of his second year's tenure of office,

concludes by saying, "that he regretted that certain circumstances would preclude him from taking in future any active part in the proceedings of the Society; but still that would never preclude him from taking a warm and affectionate interest in all that concerned the members, and that he would always deem it a privilege and a pleasure to do anything to further the interests of the Society."

These encouraging words will, we trust, bear their expected fruit, for the importance of this Society as a complement to collegiate education, and as a means of advancing the character of medicine among the people of India, is so self-evident as not to require any advocacy on our part. We would, however, conclude with the reflection, to which the entire subject with which we have been engaged so naturally leads, that the European Medical Service in India enjoys the high privilege, and incurs the grave responsibility, of being the example for good or for ill to the Native Profession of medicine, which, during the last thirty years, has been gradually taking root in that great and interesting country, and which, before long, must influence the well-being of two hundred millions of people.

The object of the Indian Medical Colleges was to remove and prevent the sufferings inflicted by ignorance and dishonesty in medical practice; and it is impossible to over-estimate the forethought and caution which this Mission enjoins, or the facility with which neglect and error may lead back to the evils of the past.

Fifty-first Annual Report of the Massachusetts Charitable Eye and Ear Infirmary for the year 1876. Boston: Alfred Mudge & Son, Printers, 34 School Street: 1876.

Fifth Annual Report of the Board of Trustees of the New York Ear Dispensary, Incorporated 8th April 1871. New York: G. P. Putnam's Sons, 182 Fifth Avenue: 1876.

FROM the statistics of the Massachusetts Eye and Ear Infirmary, we observe that the total number of eye and ear patients for 1876 was 8022; of these, 5754 were eye patients, and the remainder, 2268, ear patients. The report gives us a full classification of the patients' diseases and operations. Under diseases of the eye we have 651 patients treated for diseases of the lids; 1786 for diseases of the conjunctiva; 1298 for diseases of the cornea and sclera; 189 for diseases of the lens and ciliary body; 107 for the choroid; 32 for the retina; 85 for the optic nerve; 27 for the vitreous; 166 for the lens; 45 for lesions of the globe; 102 for affections of pericipient apparatus; 558 for refraction and accommodation; 162 for muscular affections and neuroses; 246 for diseases of the

lacrimal apparatus; general injuries, 184; unfit and unrecorded, 156; and the number of operations required, including those for cataract, iridectomy, etc., was 309. We have a clear and comprehensive statistical report of fifty operations for cataract. The fifty cataract extractions were done by the method of Von Graefe. Anæsthesia by sulphuric ether was as usual produced in every case. Then follows a table of results. The determinations of vision were necessarily made at the time of the discharge of each patient, and, as the report points out, "are not to be regarded as final." Still the results, as a whole, reflect, as well as the manner in which the cases are reported, the greatest credit on the ophthalmic surgeons of the institution.

In the statistical report of the diseases of the ear (much too shortly given), we find that generally they correspond with dispensary practice in this country. One form of disease of the ear is, as we know, much more frequently met with in the United States of America than in Great Britain, viz., tumour of the lobule, and this we find has come before the aural surgeons of this Infirmary four times during the last year. The report is too brief for comment, but, from the large number of cases treated and recorded, much praise is due to Drs Henry L. Shaw and Clarence J. Blake, as well as the Aural Externe, Henry W. Bradford, M.D.

As an educational adjunct to a large medical school, the Massachusetts Charitable Eye and Ear Infirmary is worthy the attention of our medical educationists at home. We require concentration of the material which abounds in our city and neighbourhood.

In the Fifth Annual Report of Dr Samuel Sexton, the surgeon in charge to the Board of Trustees of the New York Ear Dispensary, we have a much better classification of the diseases of the ear. The number of ear cases was 503, of throat cases 53, and unclassified 14, making a total of 570 cases treated during the year 1876. They are classified as follows:—Diseases of the auricle, 24; diseases of the external auditory canal, 85; of the middle ear, 372; of the labyrinth, eustachian tubes, etc. etc., 36; diseases of the throat, etc., 53. The operations for ear diseases were 33, and for the throat 4. We do not notice any remarkable disease under any of the above divisions, except we regard the absence of tumour of the lobule worthy of attention. This may not be so common as the frequency of dissertations in the American literature on that disease had led us to suppose.

Fownes' Manual of Chemistry: Theoretical and Practical. Vol. i. *Physical and Inorganic Chemistry.* Twelfth Edition, Revised and Corrected by HENRY WATTS, B.A., F.R.S., etc.: London, J. and A. Churchill: 1877.

WE are glad to see that this popular manual has reached its "twelfth" edition, and the one before us is a decided improvement over all the others. It is edited by the able editor of the *Dictionary of Chemistry*, and no one could have been elected more fitted for the task, and he has performed his work well. The design of the book is to offer to the student commencing the study of chemistry, an outline of the general principles of that science, and a history of the more important among the very numerous bodies which chemical investigations have made known. It is intended by the editor to serve as an introduction to the larger and more comprehensive systematic works in our own language, and in those of the Continent.

The student will find it admirably suited for all these purposes. The work is well arranged, and if the second volume be equal to the first, it will be much prized as a text-book by students of chemistry.

The first part is occupied chiefly with physics, and treats of density and specific gravity; of the physical constitution of the atmosphere, and of gases in general; of heat, light, magnetism, and electricity. These various subjects are treated at once in an interesting and strictly scientific manner. The second part contains the chemistry of elementary bodies. There is also a valuable appendix containing hydrometer tables.

We have much pleasure in highly recommending the work to students of medicine and science, and to all those who wish to prosecute the study of chemistry.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LVI.—MEETING X.

Wednesday, 4th July 1877.—Dr J. D. GILLESPIE, *President, in the Chair.*

The *President* thought it right to explain that, as no papers had been sent in for this night's meeting, it had been deemed best to

devote the evening to the exhibition of patients and pathological specimens. The rule in their Society as to these was, that no discussion be allowed on them. On this occasion, however, they would depart from it, and invite remarks on the various specimens brought forward.

EXHIBITION OF PATIENTS.

I. *Mr Chiene* showed a BOY on whom he had operated for knock-knee. Previous to the operation, such was his difficulty in progression, that it took him two hours to walk from Grove Street to Ainslie Place. Now, as they could see, the legs were practically straight. He had operated on the right leg first, and therefore the result was not quite so good as in the left one. Meyer and others had shown that the real defect in knock-knee is elongation of the internal condyle of the femur. He did not, however, wish them to pin their faith to this, as, perhaps, the external condyle was deficient. At any rate, the practical result was that the tibia was thrown out of its proper axis. Dr Ogston of Aberdeen had narrated cases¹ where he operated by sawing across the external condyle into the knee-joint and then forcing the fragment up by restoring the tibia to its proper axis. Mr Chiene, however, was afraid that, by this plan, he might interfere with the crucial ligaments; and he had accordingly operated in the following manner: Taking the tubercle into which the tendon of the adductor magnus is inserted as a guide, a vertical incision is made through skin and fascia, then, on drawing aside these, the oblique fibres of the vastus internus can be seen in front and the periosteum exposed. The internal articular artery is next secured by a double ligature and divided. Lastly, the periosteum is raised up and a wedge-shaped piece of bone cut by chisel and mallet out of the substance of the internal condyle. By gentle pressure the leg is brought to its normal axis. The knee-joint is not opened into. In both legs the wounds healed in a fortnight, but splints were kept on for two months. This case and that of a little girl, in whom the result was even better, were the first in which a wedge-shaped piece of bone had been removed from the condyle of the femur without implicating the joint. He had feared that the neck of bone might break, but he had not found this to be the case in children. He hoped that the surgeons present would be induced to try the plan he had described. Photographs of the boy, showing the great distortion that had existed, were also exhibited.

Mr Bell had been much interested and pleased with Mr Chiene's cases. The operation was one of those becoming more frequent nowadays, and rendered possible by three things, viz., Esmarch's bandage, the mallet and chisel, and last, but most important, antiseptics. Without the first two, it would be impossible; without the last, it would not be legitimate.

¹ *Edin. Med. Journal for March*, p. 782.

The *President* agreed with Mr Bell in his remarks, with the exception of thinking Esmarch's band so essential. He had seen Mr Chiene operate on the case of the little girl, and had been struck with the ease with which it was done. A good many years ago he had used the same principle in a case of compound fracture of the leg with angular union. He had no Esmarch's band, and antiseptics were unknown at that time. The result was very successful, and he hoped at their next meeting to show a cast of the limb and the piece of bone removed. He of course had nothing to say against antiseptics or Esmarch's plan; but it was possible to undertake such operations without these aids.

II. *Mr Bell* showed—(1.) An interesting specimen of EPITHELIOMA OF THE GLANS PENIS, with more of the ulcerative character than usual. It had appeared in less than three or four months. He amputated this day week, using a modification which he thought was an improvement. By splitting up the urethra he managed to avoid the contraction of the urethral orifice. Teale and Miller had also for this devised special methods. (2.) An interesting specimen of the BONES OF THE ELBOW-JOINT, removed by the subperiosteal method, which he owed to the kindness of the *President*. The case was one of injury seen by the *President* a week after the accident; and all who knew his care and surgical ability, might rest assured that everything was done to prevent any bad result. The case, however, was such a difficult one to treat, that the arm became stiff and almost straight. The cause of the difficulty in treatment was easily explained. After the operation it was found that there had been serious fracture of the olecranon, and also through the internal condyle, so that a bridge of bone formed between the two. For this reason, he had to be careful in operating for fear of injuring the brachial vessels; and, at last, he had to break through the bridge of bone already mentioned. The case was now doing well; but he had learnt from it that particularly careful drainage was required in subperiosteal cases. He had taken out the drainage-tube on the fifth day, but subsequent retention of serum had given trouble. In a similar case he would keep the drainage-tube longer in. (3.) An interesting specimen of TUMOUR OF THIGH. He had seen the patient six months ago, who told him that it had been proposed at St Bartholomew's Hospital to lay open and scoop out the growth. He himself advised amputation, but the patient would not hear of it, and put himself under the treatment of a gentleman in the west of Scotland, who diagnosed *exostosis of tibia*, and said he would remove it by means of belladonna and iodine. When the patient came back, Mr Bell still advised amputation, and performed it at the hip-joint. He was making a good recovery, his wound being antiseptic and nearly healed. Dr Wyllie had examined the tumour and would now describe it.

Dr Wyllie said the tumour was fibrous, with osseous and calcareous trabeculae, which had large encapsulated cartilage cells. At the surface they had another modification, viz., many large cells like the cartilage of incrustation in a joint. The tumour was therefore fibromatous and enchondromatous in its nature. The microscopical preparations he now showed had been decalcified with picric acid, which also stained them, and in addition they were stained with logwood.

The *President* said that the case of injury to the elbow-joint came under his care a week after the accident, with a splint on and the arm nearly straight. He took this off, put on a figure-of-eight bandage and tried careful movement, without any good effect, however. To save himself trouble, he had asked Mr Bell to take the patient into the Royal Infirmary under his care. The case was a peculiar one; and if he had been in any way to blame for the result, he would have excised the joint himself, so as to keep it quiet. He had seen the patient whose leg Mr Bell had amputated at the hip. He had a slow pulse, a clean tongue, and indeed showed no evidence of having undergone any operation.

Mr Chiene wished to congratulate Mr Bell on his case as the first one where, in a hip-joint amputation in the adult, in the Edinburgh Hospital, antiseptics had been successfully carried out. It was a great victory, as all who knew anything about the difficulty of carrying out antiseptics in a wound so near the anus could well understand. Much of the good result had been due to bringing the drainage-tube out at the outer angle of the wound, and accurately closing the incision near the anus. In regard to the elbow case he wished to mention that, within the last three years, he had treated injuries at the elbow-joint by attaching a weight of three or four pounds at night, so as gradually to bring the arm into full extension; and making the patient wear an elastic band during the day to get flexion as gradually. There was at present in the clinical wards a case of excision of the elbow—a bad one to begin with—where a very good result was being obtained by this method. Dr Gillespie's case was certainly a very peculiar one, and the result was probably unavoidable.

Mr Bell said he had used the case as a text in medical ethics to his students. There had been good treatment, good nursing, but a bad result. Moral—Be careful in judging your neighbour's cases.

III. *Dr Finlay* showed—(1.) A SPECIMEN OF FRACTURE AT THE ANATOMICAL NECK OF THE HUMERUS. The patient had also received other and fatal injuries. (2.) A CYSTIC OXIDE CALCULUS passed from the urethra.

IV. *Dr Wyllie* showed (1.) a SPECIMEN which he thought important in connection with the pathology of tetanus. The patient was a man, æt. 56, in Dr Watson's wards, who, three

weeks before, sustained a lacerated wound of the back of hand. It healed up kindly and without any trouble. The tetanus began last Thursday by lock-jaw, and difficulty in deglutition and in respiration. He died next day. There were also symptoms of double pneumonia at the base. On *post-mortem* examination nothing abnormal was found in the brain and spinal cord, except some excess of hypostatic congestion in the latter. On dissecting the skin from the back of hand, they found the wound almost entirely healed, except at its middle third, where there was still a scab. The dorsal cutaneous branches of the radial and ulnar nerves were found below the cicatrix in the midst of indurated subcutaneous tissue, in which on examination were found woody tissue, viz., trachenchyma, cellular tissue, and chlorophyll. It was apparently by their irritation that the tetanus had been caused. One curious point was, that the foreign matter so retained should have led to induration rather than to suppuration.

(2.) A SPECIMEN OF THE PONS VAROLII AND MEDULLA OBLONGATA of a patient who died on 10th March. The pons was smaller than usual, atrophy of its anterior commissural fibres being especially well marked. In the substance of the pons, to the left of the middle line, there was also a small cyst surrounded by indurated and atrophied tissue. This had resulted from plugging of the basilar artery in its upper half. On section half a dozen small channels could be seen in the artery so plugged. Six years before his death the patient had hemiplegia but no unconsciousness. The basilar artery had probably got plugged by an embolus from an aortic aneurism, and accordingly there had resulted anæmia, hemiplegia, and subsequent atrophic changes. One curious and important fact was, that an artery once plugged may have its lumen again partly restored.

OBSTETRICAL SOCIETY OF EDINBURGH.

SESSION XXXVI.—MEETING XIV.

Wednesday, 13th June 1877.—Professor SIMPSON, *President, in the Chair.*

I. *Dr Jamieson* exhibited a FÆTUS which had been born dead and doubled up, the centre of spine presenting. It had been delivered by version. The patient was multiparous.

II. *Dr Young* showed CELLULAR POLYPUS which he had removed from the os uteri. The patient had lost a great deal of blood and had fainted. The polypus was seized with a pair of long forceps and twisted off.

III. *Dr Underhill* exhibited for Dr M. Duncan a PREPARATION ILLUSTRATIVE OF DISEASED KIDNEYS OF THE FÆTUS. The condi-

tion was one of cystic degeneration. The whole of kidney substance was apparently involved. No history of the labour had been obtained.

IV. *Dr Young* communicated for *Dr Porteous* of Pathhead a CASE OF VICARIOUS MENSTRUATION, in which bleeding occurred from nose and ears. The patient had the same disagreeable and painful sensation, also a dark line below her eyes, as she experienced before the ordinary catamenial flow. The girl is not *nine* years of age. Menstruation commenced, *Dr Porteous* says, at $6\frac{1}{2}$ years of age.

V. *Dr Allan Jamieson* read a paper ON THE SYSTEMATIC PREVENTION OF AFTER-PAINS.

Professor Simpson thought the subject important for discussion. He wished he could feel sure that this line of treatment would always succeed. One of the last cases he had attended was in a case of twins in which he had used ergotine, yet patient had after-pains, although not very severe. He desired to know if any of the Fellows had tried *Dr Sidey's* treatment of after-pains by means of acupuncture.

Dr Gordon referred to a patient who had four confinements without after-pains. Chloral he found of most service in such cases. He saw no need of injecting ergot. The old manner of giving the remedy was quite satisfactory.

Dr Young had not used ergotine for after-pains, and thought it was unnecessary; he preferred ergot by the mouth. Many patients have no after-pains.

Dr Croom had not found after-pains of any extent where he injected ergotine.

Dr James Carmichael thought the point of *Dr Jamieson's* paper was, that he advised the systematic use of the remedy in every case of labour. This practice was not new, as many obstetricians gave ergot systematically in the third stage, and he believed the practice to be essentially sound. As to the use of ergotine, he did not believe, except in special cases, that it had any advantage over ergot given by the mouth.

Dr Underhill thought the objection to *Dr Jamieson's* treatment was that it was unnatural. Ergotine could not influence the occurrence of after-pains coming on a considerable time after labour. He did not think *Dr Jamieson* had adduced sufficient evidence to prove his case. He had lately attended a case of twins in which he gave ergot with good results.

Dr Young thought much depended upon perfect contraction of the uterus by pressure.

Dr Jamieson, in reply, referred to some points in anatomy of the uterine veins. He thought ergot slower in action than ergotine, therefore not so useful. As to late occurrence of after-pains, he had seen it, but not when ergotine had been used.

SESSION XXXVI.—MEETING XV.

Wednesday, 11th July 1877.—Dr WILSON in the Chair.

I. *Dr James Carmichael* exhibited an ANENCEPHALOUS FŒTUS born co-twin with a healthy child; and also the PLACENTÆ, which were separate. The amniotic sac of the anencephalous fœtus was greatly distended with fluid. A recent clot of blood was observed between the membranes, about three inches from the placental margin. The clot was recent.

II. *Professor Simpson* showed a large FIBRO-MYOMATOUS POLYPUS. The large fleshy mass was divided into four unequal segments, which together formed a rounded body of the size of a large male infant's head. The following notes of the case had been extracted from his ward journal by Mr Walter Strang:—

C. A., aged 46, residing at Prestonhall, near Markinch, was admitted on Tuesday, 3d July 1877, to bed 4, Ward XII., on the recommendation of Dr Macdonald of Markinch.

She complained of flooding and whites.

History of Present Illness.—The usual duration of her menstrual flow had been three days; but about two years ago it began gradually to increase from month to month, till about November 1875 she began to suffer from distinct menorrhagia. The flow at that time lasted eight days, was excessive in amount, and accompanied with clots. The duration and amount of flow kept on increasing, so that for the last eight months she had menstruated for a fortnight at a time. She has not had much pain at any time, but feelings of intense exhaustion. In the intermenstrual period there was profuse leucorrhœa. About a month ago, at the commencement of menstruation, she took a pain in the back so severe, that the doctor had to be sent for immediately. Some medicine which he gave her relieved her pain.

Menstrual History.—She commenced to menstruate at the age of 14. Till her present illness, the duration of the flow was always three days, and menstruation recurred with perfect regularity every twenty-eight days.

Obstetric History.—She married at the age of 27, and has had four children, the eldest born twenty-one months after her marriage, the youngest eleven years ago. The ages of the children are, 17, 15, 13, 11. She has had two miscarriages, the first (third month) occurred nine months after her marriage; the second (also third month) took place about nine years ago. Flooding continued for about eight days after the last miscarriage.

All her labours have been easy and normal.

Her general health has been excellent till within the last two years, and now she presents a pale, weary, almost cachectic appearance.

The lower part of the abdomen was occupied by a firm body, reaching nearly a hand-breadth above the pubes, and of the form and feel of the enlarged uterus. A distinct vascular bruit could be heard with the stethoscope, loudest on the right side of the organ. On making a vaginal examination, the exploring finger meets a body immediately within the vulva, firm and fleshy, distending the vaginal walls, and filling up the whole pelvic excavation. On combined external and internal examination, the vaginal mass is felt to move in concert with the uterus; but it is utterly impossible to reach the vaginal roof, or to pass a sound into the uterine cavity.

Operation.—On 7th July, the patient having been put under the influence of chloroform, in the presence of Dr Macdonald, Dr Caldwell from Illinois, and others, Professor Simpson passed his left hand into the vagina, and ascertained that the growth came from within the uterus, though the root of it was not accessible. As neither the chain of an *écraseur*, nor the platinum wire of a galvano-caustic battery, could be passed high up on the body, the most prominent portion of it was crushed off with the *écraseur*. A second and a third section were thus removed before the body was so far reduced in bulk to allow of its pedicle being reached.

This was now found attached to the back wall of the uterus, above the *os internum*. It was encircled with the *écraseur*, and crushed slowly through, and the wound surface measured $1\frac{1}{2}$ inches in diameter. There was no great loss of blood. The perineum was lacerated from the passing in of the hand, and the extraction afterwards of the mass. The cavity was syringed with some warm water and carbolic acid; and after the patient was put in bed, an opiate was administered.

There has been no bad symptom since the operation. The vagina is syringed twice a day with warm water, and there is every prospect of a good recovery.

III. *Dr Bruce* read the following paper on the RESUSCITATION OF STILL-BORN CHILDREN, with cases:—The subject of the resuscitation of the still-born infant is one of great importance, and it is most desirable that the best method of ensuring success should be thoroughly appreciated.

I feel quite convinced, that a little want of decision and energy will, in some cases, make all the difference between having a living or a dead child to hand over to the nurse.

Two cases lately under my observation strongly impressed me with the value of artificial respiration after other methods had failed.

No one can be engaged in midwifery practice without meeting with still-born children every now and then; the proportion in my practice being nearly four per cent. Many of these had been dead for a variable period, hours, days, or weeks previously; others

were premature and could not have survived their birth; while some were monstrosities. But there remained a certain proportion known to be alive, until, at least, very recently before birth, and it is to such cases that the present remarks refer. To those in which respiration does not begin spontaneously at birth, and yet where the heart has not entirely ceased to beat, for I think the cases are very rare where attempts at resuscitation will succeed, when auscultation or pressing the fingers under the ribs fails to detect any impulse in the cardiac organ.

Cases of still-born children may be divided into those where attempts at resuscitation would be useless, and those where there is, at least, some prospect of success. The great majority of remediable cases are brought round without much difficulty by ordinary measures; hot and cold water alternately, or the cold affusion; friction with spirits over the cardiac region, slapping the back or nates, etc.; but there is a certain proportion which resists these measures, and where our only prospect of success lies in the induction of artificial respiration. The Sylvester or the Marshall Hall methods I have not found very efficacious in the infant, and therefore would not put off much time in giving them a trial. Undoubtedly, the best plan of all is to pass a tube fairly into the larynx, and transmit air directly to the lungs. Some advocate applying the mouth of the practitioner to the child's mouth, while the cartilages of the larynx are pressed backwards to close the oesophagus, the nostrils at the same time being held. This is a very ready method, but by no means an elegant or even a very successful one. The only admissible plan is to pass the tube into the larynx, and then convey air to the lungs either by the lungs of the accoucheur, or by means of one or other of the apparatuses invented for the purpose, such as an indiarubber ball, probably one of the simplest and the best.

I am disposed to think that, besides being a readier method, the warming of the air by the operator's mouth and lungs is rather an advantage; and as for this purpose he must take in a larger supply of air than he requires for his own purposes, what he has to spare will be sufficiently pure for all practical purposes; while, if need be, any mucus or other fluid filling up the trachea, and interfering with respiration, may be removed by suction, though for this purpose an apparatus might be more agreeably made use of than the mouth.

Among the more important causes of still-births are tedious labours, prolapse of the cord, breech and inferior extremity presentations (including turning). The first of these is to a great extent under command by the timely use of forceps. Prolapse of the cord is comparatively unfrequent, but breech and footling cases are quite common; and, perhaps, it is as a consequence of such that our aid will most frequently be required. Certainly they give rise to a great deal of anxiety, when from the large size of the child's

head, or the disproportion of the pelvis, we find a difficulty in completing the labour; for, although the forceps are quite at hand, so much time may be expended in the extraction of the head, that all attempts at resuscitation are in vain. The two cases which have led me to bring these remarks before the Society were examples, the one of a knee, and the other of a breech presentation.

Case 1.—Mrs J., in labour on 25th April last with her eighth child.

On my arrival, finding the os fully dilated, I ruptured the membranes, and a large quantity of liquor amnii escaped.

There was no difficulty in the delivery, until it came to the head, which, being of large size, necessitated a considerable amount of traction, and a corresponding loss of time before it could be extracted.

I do not think the forceps would have expedited matters here, and they were not made use of. The child, on being born, gave one or two slight gasps, and then all efforts to respire ceased entirely; however, the heart was felt to pulsate, and attempts at resuscitation were at once proceeded with by the usual methods, as already referred to. They were, however, attended with no success; the heart beat more and more slowly, and it seemed as if the child was almost past recovery.

Without losing any more time, I at once introduced a female catheter into the larynx, and by direct inflation carried on artificial respiration. After continuing with this for some time, the pulsations of the heart were found to increase somewhat in frequency and strength, while the colour of the skin changed slightly from its previous deathlike paleness; then feeble attempts at spontaneous respiration began, at first at long intervals, then gradually becoming more and more frequent; symptoms of vitality evidently increased, and in a little while longer, circulation and respiration were fully established about half an hour after birth.

This case seemed so hopeless at one time, and the nurse was so impressed with the uselessness of persevering any longer in the attempt to resuscitate, that she begged me to leave the child alone and attend to the mother; but as she did not particularly require any attention from me at the moment, and as I had not given up hopes of the child, I disregarded the injunction and persevered in my own way.

The result was extremely satisfactory, and exemplified in a marked degree the advantages of artificial respiration, when other measures had signally failed.

Case 2.—Mrs G., confined 1st of June. Her tenth pregnancy and eleventh child, having once had twins. She has been extremely unfortunate with her children. Four were still-born; of the others, one died at eleven months; the remainder survived only a few hours or days, and she is now left without any. The patient is very pale and weakly in appearance, but enjoys good health

in general. The early period of this pregnancy was attended with a great amount of sickness, but afterwards nothing remarkable. The labour was an ordinary case of breech presentation, and there was no difficulty met with until it came to the expulsion of the head, which was attended with some little delay. On being born, the infant showed no signs of life, except that the heart beat very slowly.

Here again the ordinary treatment of the still-born was of no avail, so I immediately introduced the female catheter and carried on artificial respiration. This was continued for a little while without any response, then gradually the heart was observed to beat stronger and quicker, and there were decided symptoms of returning vitality, as shown in attempts at respiration, short gasps every now and then, while the gums closed firmly on my finger. There was also occasional contraction of the muscles of the face as if about to cry.

My hopes were raised, and I confidently expected to be as successful in this as in my other case. I was disappointed, however, to find that when I relaxed my efforts the infant only respired very slightly once or twice; while the cardiac impulse perceptibly lessened in force and frequency. A renewal of my exertions brought about a return of the favourable symptoms, only to relapse again on their discontinuance. Three hours and a quarter elapsed before I could make up my mind that any further continuance of the struggle was useless—that there was some unfavourable condition of the system present which counteracted anything that I could do. I had, in a manner, kept in life for a considerable time, and given every opportunity for the vital force to come into play, yet after all was reluctantly compelled to inform the mother that she must make up her mind to add another to her long list of disappointments.

Although in this instance the result was not a living child, still it was so far a success, proving the immense value of artificial respiration in sustaining life, though in a minor degree, throughout so long a period, as, when the process was finally relinquished, all signs of vitality rapidly ceased.

No opportunity was afforded me of afterwards ascertaining by section the nature of the physical condition which rendered nugatory a successful result. I would here remark, that the female catheter is not the best instrument to pass into the larynx, the curve being too slight, and, further, having generally only one opening, it will be found sometimes that this opening gets closed up from pressure upon some of the textures with which it is brought in contact, and then no air will enter the lungs; besides, there is undue pressure upon some places, which is completely obviated by using an instrument with a proper curve, and it is not only more readily introduced, but, moreover, less liable to injure the passages. Another improvement would probably be to have

several small openings near the end, and one quite at the extremity of the tube,—something of the kind I now show you, which has just been made for me by Mr Gardner.

As to the introduction of the instrument, there is no difficulty whatever; the left fore-finger acts as a guide by being passed over the tongue, and resting upon the rima glottidis; that you have succeeded will at once become evident on attempting to inflate the lungs. The operator ought to inspire very fully as well as rapidly, and repeat the process often, alike to imitate the more frequent respiratory movements of the infant, and to allow air as much oxygenated as possible to enter its lungs. Care must also be taken not to blow through the tube with too great force, lest we should do injury to the delicate air-cells, and yet, making sure that we expand them sufficiently, as a too feeble rush of air might defeat our aim.

I have brought these cases under the notice of the Society, not to illustrate any new method of treatment, but to impress upon those who may not have given the subject so much attention as it deserves, the necessity of never considering a child past recovery until artificial respiration has had a full and fair trial, more particularly where the slightest pulsation of the heart can be detected, and, if in any doubt whatever, always to give the infant the benefit of that doubt.

Dr Ritchie mentioned a method of establishing respiration in the fœtus by flexing the thighs of the fœtus upon the chest. He did not approve of using the tube as frequently as *Dr Bruce* was in the habit of doing, although it was perhaps a more certain means than any other.

Dr Gordon thought galvanism might be of use in keeping up the action of the heart, and that we should never despair of establishing respiration when the heart's pulsations were active.

Dr Bruce wished *Dr Ritchie* and the Fellows to understand that, although he advocated the use of the tube, he did not deprecate other methods; but, on the contrary, always had recourse to them in the first instance, and it was only in the comparatively rare cases where such did not succeed that he would recommend direct inflation. He was confident that in certain cases it was the only means of saving life, and ought never to be lost sight of, while he did not consider there was any danger connected with the operation when properly carried out.

Professor Simpson expressed the regret which he was sure was felt by all the Fellows present, that in consequence of the amount of business to be transacted at this closing meeting there was not time to enter on a fuller discussion of the important subject which had been brought before them in *Dr Bruce's* interesting communication.

IV. *Dr Matthews Duncan* communicated, for *Dr Wilson of Alloa*,

the following CASE OF LABOUR IMPEDED BY ENLARGEMENT OF THE KIDNEYS. The paper was accompanied by a notice by Mr Hamilton of the pathological condition of the kidneys after examination.

Case of Labour Impeded by Enlargement of the Fœtal Kidneys.

I was called late on Friday, 8th June, to see Mrs A., æt. 23, primipara, and was informed that the waters were discharged and that she was in constant pain. On examination, the mouth of the womb was found closed, and the cervix rigid. There was no change till 10 P.M. on Saturday, when I managed to pass two fingers within the os uteri. About 3 A.M. on Sunday, the head, after severe pains, was born. Then the difficulty appeared; the shoulders would not advance, and it was after some exertion that I brought down first one arm and then another. Now further progress was completely arrested. As the child was dead, I passed a clove hitch around it under the armpits, and, while pulling upon it, passed my left hand along the anterior surface of the child and could feel the belly enormously enlarged.

Not caring to have all the responsibility, I sent for my friend Dr Kirkwood, and asked him to bring his perforator. After consultation, we resolved to eviscerate. Passing my left hand up to the belly of the child, and guiding the perforator along my arm and palm of the hand, I pushed it into the abdomen, made a crucial incision, and removed part of the intestines, etc.; but still it would not move.

Dr Kirkwood then placed her under the influence of chloroform, and we removed the already much injured head and shoulders from the body of the child.

I then insinuated my hand into the uterus and seized the right foot and managed to get it so far down that, passing a noose over my left wrist and slipping it up over my hand, I fixed it around the ankle of the child. Then, drawing upon it while pushing up the body of the child, we effected nothing. The left foot lying high in the fundus of the uterus was now seized; and, having got both legs, I completed turning by pulling upon them while simultaneously pushing up the body. The left hand was now placed in the wound of the belly in order, by pulling, to assist the traction by the legs. Thus delivery was effected.

My attention was now directed to a large tumour in the abdomen of the child, which appeared to be an enlarged kidney attached in its ordinary way. Previous to the extraction of the placenta, its neighbour was found in the uterus and removed.

On the placenta being removed, flooding set in, and was arrested in a few minutes by ordinary remedies. Subsequent recovery was impeded by retention of urine, fever, and slight albuminuria.

The kidneys were exhibited by Dr Matthews Duncan at last meeting of the Society; and he now presented an account of them, for which he was indebted to an able pathologist.

Report on two Kidneys from a Fœtus at full time, by Dr Hamilton.

Each kidney weighed 1 lb. and measured in length $5\frac{1}{4}$ inches, in greatest breadth $3\frac{1}{4}$ inches.

The organs had each a somewhat rounded shape, and were of flabby consistence. On cutting into them, no division could be seen into medulla and cortex; but the whole kidney substance was converted into a gelatinous-looking material, in which were enormous numbers of cysts varying from a pin's head to a pea in size. They contained a quantity of clear fluid, which escaped in large quantity on section. The capsule stripped off very easily, and left a smooth surface, on which numbers of the above-mentioned cysts could be seen projecting.

Neither the pelvis nor the ureters seemed dilated; the ureters certainly were not so, and in the portion attached to the organs no obstruction was to be met with.

On microscopic examination, numbers of apparently normal tubes were seen, while others, and by far the greater number, were in different stages of dilatation. Each cyst seemed to consist of a dilated tubule or Malpighian capsule. They were lined by an epithelium and had a membrana propria. The intervening textures were in some places enormously abundant, and consisted of fibrous material in different degrees of development, which, however, in many places presented exactly the features of mucoid degeneration. This consisted in the stroma becoming transparent and leaving the connective tissue corpuscles lying in a clear matrix. The cystic disease was most developed in the medullary portion, least so towards the capsule. In the cortical portion, close to the capsule, there was very little of the mucoid degeneration, but a large quantity of fibrous tissue between the tubules. The explanation of the affection in the fœtus is in all probability to be seen in the mode of development of the kidney. The cause of the dilatation has evidently been some obstruction; and this apparently has not been in any part of the ureters, otherwise we should have expected some further change in them. It has evidently been what Klebs calls a "papillary atresia." According to him, this is due to a fault in the complete development of the organ. It is a fact made out by Kupffer, Schenk, and others, that the tubules of the kidney and the ureters are at first separate, that is to say, they are developed separately, and only communicate in later embryonic life. One can easily understand how, from various causes, this communication might be disturbed. In this case it has evidently been by an excessive development of intertubular tissue in the medullary or rather the papillary portion of the organ. Whether this has been inflammatory or not, is not so clear; but, from absence of any other signs of inflammation, such as adhesion of the capsule, it has in all probability been merely an excessive development of the intertubular tissue derived from the prevertebral. The tubules

have evidently excreted a certain quantity of fluid; and this, along with the atresia of the papillæ, furnishes the factors for a cystic degeneration. The enormous size of the organs is due to—(1.) The large number of cysts; (2.) The increase in the intertubular tissue.

Professor Simpson referred to a similar case which had occurred in the practice of Dr Key of Montrose.

Dr Macdonald thought pathological interest of the case was very great.

V. *Dr Matthews Duncan* communicated, for Dr Hunter of Jedburgh, the following CASE OF LABOUR COMPLICATED BY PROLAPSE OF THE LEG:—On 10th January, Mrs K. sent for me to attend her in labour. I saw her in the afternoon, and found she had been ill all the forenoon and morning, and that she did not expect to be confined till about six weeks or two months later. It was her first confinement.

On passing my hand over the abdomen, I found the uterine tumour small, corresponding with her opinion as to the period of pregnancy she had reached. Making internal examination, the finger came in contact with a foot, which had passed the brim of the pelvis and was easily examined. The cervix was fully dilated, the bag of waters broken, the parts moist, dilatable, and roomy.

On further examination, passing the finger above the foot and ankle, I found the head, having the dorsum of the foot in contact with its presenting surface. Naturally, I thought there were twins, and tried to push up the foot above the head so as to allow the latter to come down. I did not, on account of the patient's complaints, introduce my whole hand to attempt the replacement; and I soon desisted from further efforts to effect it.

Now, considering that the case was one of twins, between the seventh and eighth month, and that, as the abdomen was small, the children were probably small, that the mother was young and the parts roomy and dilatable, I concluded to let things alone for some time.

The pains, during my presence, were not strong, and, for half or three-quarters of an hour, produced no advance of the labour. The presentation continued as before. After another quarter of an hour I found the head on the perineum, and beginning to protrude from the vulva. There was no foot to be found now, and another pain or two expelled the head alone. I am not sure, but had a strong impression, that the foot came with the shoulders. Thus, the labour was easy, not tedious, and ended quite satisfactorily. The child was small, and seemed about the eighth month. It lived three or four days only, but did not receive due care.

Before the child was dressed, I replaced the foot as it had been during labour, and it was quite easily done. The foot had some

tendency to remain in this abnormal position, to which it had been perhaps accustomed for some considerable time. The hip-joint was very accommodating.

The head presented in the first position; but I cannot remember which leg was prolapsed.

Dr Murray mentioned a case which he had met with in which foot presented along with the head, and there was also prolapse of the cord.

Dr Milne thought that there should never be delay in these cases—delivery should be effected at once.

VI. *Dr Angus Macdonald* read paper on the NATURE AND MECHANISM OF RUPTURE OF THE UTERUS WITHIN ITS CERVICAL PORTION, illustrated by the histories of two cases, and with specimens, which appears at p. 193 of this Journal.

Professor Simpson remarked on the great interest of the paper, which would worthily conclude the next volume of the Society's Transactions.

Dr Matthews Duncan did not intend to enter into discussion. He thought there was much matter in the paper deserving of study.

Part Fourth.

PERISCOPE.

CONCERNING THE NORMAL ARCHED OR SPANNED CONDITIONS OF THE HEALTHY MEMBRANA TYMPANI IN THE HUMAN SUBJECT. By Professor Dr JOS. GRUBER, of Vienna.—As an introduction to an article which will appear in the next number of this Journal¹ upon the irregularities of the spanning of the drumhead, I will communicate the results of my investigations, conducted both upon the living and the dead subject on the healthy membrana tympani, in the present number.

The statements made by various recent authorities are in many ways similar, but for practical purposes they are by no means satisfactory. They are least so as yet upon the fundamental conditions which bring about the plane and curved portions of the membrana tympani in its normal healthy condition, although our practical wants demand them first of all, so that nothing may remain obscure.

In the words, *the drumhead is not so tensely stretched, but that it is moved by like causes, as well towards the tympanum as towards the external auditory meatus in its whole extent*, is as a rule all that most authors say regarding the stretched condition of the

¹ *Monatschrift für Ohrenheilkunde*, May 1877, Berlin.

drumhead. We come upon very few statements concerning smaller portions of the drumhead; true, we have some such regarding the membrana flaccida and the superior posterior quadrant.

Helmholtz has written most about the different divisions of the membrana tympani in his classical work *Die Mechanik des Gehörknöchelchen und des Trommelfells*.—(Pflüger's *Archiv für die gesammte Physiologie des Menschen und der Thiere*. Bonn, 1868, I. Jahrg., I. Heft.)

To obtain a more definite knowledge of the spanned stretching of the membrana tympani I proceeded as follows:—

1. I took a normal temporal bone from the dead body, to which the eustachian tube was in its entirety still attached. The anterior wall of the external auditory meatus was removed, thereby exposing the membrana tympani. With a well-rounded probe the different divisions of the drumhead were tested. The posterior segment was readily felt to yield most easily to the probe; more so than the anterior, and the posterior superior quadrant yielded most whilst it was also least tightly spanned. The anterior superior quadrant yielded least, and was the most tightly spanned segment of the whole drumhead. (As a matter of course the membrana flaccida is not considered in this comparison.) If on the part of the operator the probe was simply allowed to press upon the different segments of the drumhead, the greatest depression took place in the posterior superior quadrant, whilst the smallest was in the anterior superior quadrant.

2. With the same drumheads as were used in the first examination, on which at least twenty examinations with the probe were made, I made, to begin with, pricks with fine pointed needles, afterwards equally large cuts with cutting instruments in different directions, and noted the gaping of the wounds. Thrust wounds with small fine pointed needles gave no results, except that the needles penetrated the anterior segment of the drumhead more readily than they did the posterior, which confirms the results of the first experiment, viz., that the anterior segment is more tightly stretched than the posterior. The punctures taught us nothing further, as the tissues quickly resumed their former position. Cuts, on the other hand, confirmed in a very marked manner the results which the probing in the first experiment gave. Cuts of an equal length in the anterior and posterior segments exhibited quite a different behaviour in regard to the edges of the wound. The same sized wound in the anterior segment from the retraction of the elastic fibres was larger, and the edges gaped more, than was the case in the posterior segment.

3. A further experiment as a check on the two preceding was made on similarly prepared temporal bones, with unscathed membranæ tympani. They were put in a position so that through the normal Eustachian tube a very weak stream of air could be blown with the help of a catheter on to the drumhead, while at

the same time it could easily be examined by the same person on a temporal bone thus removed from the head. By this it was apparent, as we have often opportunity to observe clinically, that by a very weak stream of air the posterior superior quadrant moves towards the external auditory meatus, and when the moving force is sufficient, this motion takes place in the other parts of the membrane, but in the proportion as we would have expected from the previous experiments. The posterior segment bulges out much more towards the external auditory meatus than the anterior, and again the change in position is much less in the anterior superior quadrant.

Otherwise these experiments were interesting to me, as they showed that the yielding movement of the anterior inferior quadrant of the drumhead was always more than that of the anterior superior quadrant, whilst we formerly by clinical observation of the living subject had always observed the contrary. This alone is explained by the more favourable conditions for examination we have in a temporal bone so prepared.

The question now arises, To what are these peculiarly stretched spanned conditions of the drumhead due?

We had previously been accustomed to connect the spanned condition of the *membrana tympani* with the peculiar union of the membrane with the handle of the malleus. "The drumhead," says Helmholtz in his previously mentioned work, "is not stretched as a plane surface in its ring of insertion, but its middle or umbo is strongly drawn inwards on account of the attachment of the long process of the malleus, and therefore the membrane has a funnel or mill-hopper shape, so that the extremity of the handle of the hammer forms the apex of the hopper, and its meridional lines are arched convexly towards the cavity of the tympanum." On account of this, to which until now all anatomists and otologists have given allegiance, the spanned conditions of the drumhead are accounted for chiefly through the position of the handle of the malleus, and following that, they have been accustomed to unite in practice every abnormal curvature of the drumhead with changes in the position and form of the attachment of the handle of the malleus. But we have learned from a single anatomical investigation that the whole theory to which we have so long paid homage is false.

We remove from a temporal bone prepared as before the roof of the tympanum, cut through the tendon of the tensor tympani muscle, as well as the articulation of the incus with the stapes,¹ and with a fine saw cut through in a line parallel with the long axis of the tympanic cavity, so as to separate the outer wall of the tympanum from the inner. Thus we have the drumhead in its normal position at the inner edge of the external auditory meatus

¹ By this division we can convince ourselves that the union of these structures with the drumhead in the normal ear has no effect worthy of notice on the spanned condition of the drumhead.

with the malleus, and this again with the incus attached. We now cautiously remove the incus and observe the attachment of the long process of the malleus to the membrana tympani. Thereafter we remove, with the greatest of caution, the malleus from the membrana tympani and its other connections, and then we have the drumhead arched across the inner end of the external auditory meatus.¹ Now we will be convinced that the umbo has not fallen in, in the slightest degree, from its hopper-shaped form; notwithstanding that the malleus has been taken away, the shape of the whole membrana tympani has remained unchanged, and still the posterior segment appears less and the anterior more spanned; indeed, we can cut into a membrana tympani in this condition; we can cut little pieces out of it; what remains still bears to the observer the traces of its former vaulting and tension's relationships, which is certainly the clearest proof that the conditions of the peculiar tension's relationships of the drumhead are to be sought for in its own construction.

The necessary conditions to the formation of the umbo are not to be sought for in the nature of the fastening of the membrana tympani on to the edges of the external auditory meatus; for we can take the drumhead, which was separated from the malleus in the manner already described, out of the end of the external auditory meatus, and it still retains its own arching and stretching, of which one is more easily convinced if we lay it upon a glass plate. It only loses, to some extent, its own peculiar form and spanning through tearing and pulling it about, or, if it has lain for a considerable time in water, from changes which take place in its structures.

Besides what has already been said, the facts of the case distinctly prove, that, if we take a simple animal membrane, and bring it in all its parts shaped and fashioned to correspond with the natural membrana tympani, and unite it to the handle of the malleus, after the method of nature's union, we do not form a well-marked umbo. There is formed a more or less well-impressed deepening, which is nevertheless associated with folds in its structure that do not correspond to the normal condition of the drumhead.

(To be continued.)

DEATH AND DANGER FROM ETHER.—My attention was called to this subject by the occurrence of three cases that have come under my observation in a series of years. They were alike in the insidious suddenness of their access, and in the exsanguinated condition of the patient.

¹ This is most easily accomplished, if, with a fine sharp convex knife, we make an incision along the inner border of the hammer, removing with care the cut-through chorda tympani and the mucous membrane, and then separate the hammer from the drumhead, thereby leaving the cartilaginous structure attached to the drumhead.

Case 1.—Was seen in consultation. The patient was a young man sixteen years of age, of dark complexion, and good muscular development, his previous habits had been good, and also his general health. One month previous he had received a pistol-shot wound. The bullet entered just above the knee, and emerged on the posterior part of the limb, just below the popliteal space. His condition when seen was that of anæmia, consequent on loss of blood at the time of the injury, and the pain and inflammation that succeeded. The pulse was regular and weak, the face was extremely pale, and respiration regular, he complained of pain in the region of the knee, which was very much swollen and tense. Ether was administered, and he passed under its effect very pleasantly; there was no excited period during its inhalation. An incision was made into the most dependent part of the swelling, and a large quantity of old clots escaped. This was followed by quite a smart hæmorrhage from the direction of the popliteal artery. This hæmorrhage was controlled by the immediate application of pressure. The respiration, which up to this time had been perfectly regular and quiet in its character, suddenly stopped. He had inhaled only three ounces of ether, and the sponge had been removed from his nose for a minute or two. The face and lips were extremely pale, and arrest of respiration took place with such insidiousness that it seemed as if the patient had suddenly omitted a breath. The pulse was regular and feeble at the wrist, and for a moment it seemed like the slight arrest of respiration, seen in the administration of ether where a shake arouses the patient, and he makes a deep inspiration, and goes on breathing regularly. Artificial respiration was resorted to, ammonia injected hypodermically, stimulating enema administered, all without avail, as the patient never breathed again, although the pulse continued perceptible at the wrist for some time after the stoppage of the respiration.

Case 2.—Was a case of abortion, in a lady aged about forty, married, and of dark complexion. She was fleshy and sallow, and had been flowing for forty-eight hours, when I was called to see her in consultation. Ether was administered to relieve the pain of removing the placenta, as the uterus was situated high up in the pelvis. The pulse before the operation was moderately strong and slightly accelerated. The patient passed under the effect of the anæsthetic without a struggle. The placenta was removed in pieces, it being adherent to the wall of the uterus; its removal was accompanied by no undue amount of hæmorrhage, and the etherization was discontinued. Having examined the pulse and found it somewhat fuller than before the operation, and the respiration regular, I left the attending physician in care of the patient, and went to another part of the room to wash my hands, where I was joined by the doctor, and while engaged in conversation with him and at the same time looking at the patient, her respiration suddenly ceased. Our efforts for her relief were directed entirely to artificial respira-

tion. After about two minutes she began to respire again, at first feebly and at intervals, but soon after with strength and regularity. The pulse was regular and weak at the wrist during the whole period of stoppage of the respiration.

Case 3.—Was seen in consultation. The patient was a lady of about forty years of age, married, and had had several children. She had been ill with metrorrhagia for eleven years, and presented a degree of anæmia that was most ghastly. Her complexion was perfectly waxy, and almost transparent in its whiteness. On digital examination of the vagina, the cervix admitted the tip of the index finger and was full of granulations. A sponge-tent was introduced, and left until the next day, when it was decided to etherize sufficiently to relieve the pain of the examination of the uterine cavity. The immediate effect of the etherization was all that could be wished. The whole lining membrane of the uterus, like the cervix, was lined with granulations and fungosities. While the attending physician was confirming my diagnosis, the respiration suddenly ceased. The head, which had been low, was placed still lower, and artificial respiration was immediately resorted to. After persistent efforts for about three minutes, that seemed an eternity, I discovered a slight superficial respiration, which we continued to supplement and assist until respiration became normal. The pulse remained about what it was before the etherization, both as to its regularity and strength, during this whole period. I might add that the action of the sponge tents proved entirely remedial, although originally used only as a means of diagnosis.—Dr Shreve in *Practitioner*, August 1.

RECENT PROGRESS IN SURGERY. By G. COLLINS WARREN, M.D.
—*Excision of Joints.*—Dr Culbertson has collected his cases by means of circulars addressed to physicians in the United States and reference to various surgical treatises and medical journals. The work is chiefly statistical in character.

Excision of the Hip-Joint.—One hundred and twenty-one cases of excision for gunshot injury have been collected. Of one hundred and nineteen of these, of which the result is known, thirteen recovered. The results given show that this excision cannot be strongly advocated with a view of obtaining useful limbs, but simply as a surgical resource to save life.

Four hundred and seventy-two cases of excision for disease are given. Of these two hundred and forty-one cases were of partial excision. In regard to the extent of bone removed, we learn that the greatest mortality was shown in cases in which the head of the femur alone was excised, next the head and neck, next head, neck, and trochanter. The most favourable results were obtained when the head and part of the trochanter were removed. There are one hundred and seventy-seven cases of complete excision for disease. We find here that the mortality is greater in complete than in partial excisions; that it increases as the amount of pelvic bone is

removed. "One might say that the mortality-centre is at the head of the femur, the rate diminishing as the bone is removed outwards along the femur, but increasing as it advances inwards upon the pelvis." Ninety cases of this series recovered. Forty-five per cent. of these obtained "perfect limbs."

Excision of the Knee-Joint.—Mr Filkin, of Northwich, England, was the first to execute a complete excision of this joint for disease, in 1762. The author has collected about seven hundred cases. In comparing hospital with private practice we find that 25 per cent. died in private practice, and 87·5 per cent. in hospital practice, when the operation was done for gunshot injury. When done for disease the mortality in private practice was 30·76 per cent., and in hospital practice 25 per cent. Males endure this operation better than females, according to these statistics. For gunshot wounds the most favourable period of life for the operation is from fifteen to twenty years. In disease the most favourable is from five to fifteen years. The form of incision made no essential difference in the mortality. In gunshot injuries 58·82 per cent. gained useful limbs, and in 23·52 per cent. the limbs were worthless. In excision for disease, four hundred and twenty cases recovering and eleven dying, 14·38 per cent. had "perfect" and 41·45 per cent. useful limbs.

Excision of the Ankle-Joint.—Two hundred and eighty-five cases for disease, injury, or deformity are reported, and forty-five for gunshot injury. The mortality is greater in gunshot wounds than in injuries; there is no mortality among the cases of excision for disease and deformity in the "traumatic," non-traumatic, malignant, or syphilitic cases. The author says that "it is evident a large proportion of these excisions result in more or less usefulness of the members."

Excision of the Shoulder-Joint.—About a thousand cases are included under this head. A little over two per cent. gained perfect limbs in gunshot injuries, and 22 per cent. had useful members. In 1·03 per cent. the extremities were worthless. In the class of injuries 12 per cent. secured perfect results. In disease perfect results were obtained in 9·47 per cent., and 70·52 per cent. were useful, 4·15 per cent. were worthless. A few cases of subperiosteal excision are given, and we find in one case where 4·71 inches of the bone were removed there was but 1·17th of an inch shortening. In a second case where 3·93 inches of bone was excised, there was 75 of an inch shortening only. It is to be regretted that the question of subperiosteal resection is not considered in a special table for all the joints, but we presume the number of these cases were too few to admit of a fair comparison.

Excision of the Elbow-Joint.—The most favourable age for excision of this joint for disease was found to be from ten to twenty years. But about five per cent. of the patients died of this operation. A large per cent. gained useful limbs. The results as to usefulness are more satisfactory in the partial than in the complete excision.

Excision of the Wrist-Joint.—The single longitudinal incision gave the most favourable results, and the double lateral incision and Lister's modification of the same gained useful members next in order. In disease perfect results were obtained in 7·59 per cent. of the cases, 45·57 per cent. gained useful limbs, and in 24·03 per cent. the members were worthless.—*Boston Medical and Surgical Journal*, 28th June.

THE MODEL PHYSICIAN.—“Whoever, in knowledge of natural phenomena, in mind and character, is a model man, he is the physician as he will be. There is on earth nothing greater and more beautiful than man; he is the hardest and most difficult exercise for thought and hands; his birth and death, his life and his afflictions, all are in the highest sense remarkable and impressive. Sharp eyes and delicate ears must thou bring with thee; great talents of observation and patience, and further patience to learn endlessly; a clear, critical head, with iron will, which strengthens in need, and yet a warm sympathetic heart, that shares and feels every woe; the support of religion and moral earnestness which rise above worldliness, gold, and fame, added to a pleasant address, suavity in discourse, and proportion in thy fingers, health of body and soul, all this must thou have if thou wouldst not be an unfortunate or a bad physician; thou must bear the camel load of omniscience, and preserve the freshness of the poet. Thou must counterbalance all the arts of quackery, and thereby remain an honest man; medicine must—to this all tends—be thy religion, thy politics, thy misery, and thy joy. Wherefore advise no man to become a physician! Should he wish it, warn him off forcibly and earnestly; but wishes he notwithstanding, then give him thy blessing, inasmuch as it is something worth; he can use it.”—From Souderegger, quoted in *Philadelphia Medical and Surgical Reporter*, 21st July 1877.

WE extract the following admirably-concise account of an important subject from our excellent contemporary, the *Philadelphia Medical and Surgical Reporter*:—

EXCISION OF THE LOWER END OF THE RECTUM IN CASES OF CANCER.—As far back as 1739 Faget successfully removed an inch and a half of the whole circumference of the rectum, and the patient subsequently had control of the function of defecation and the retention of flatus (Velpeau, *Nouv. Elém. de Méd. Opér.* iii. 1038). The subject was, however, left in abeyance until Lisfranc, in 1826 and 1828, successfully treated three patients by this heroic method; but although he operated on six other cases subsequently the procedure was not so uniformly happy in its termination. Three or four of his patients died, two of them, at least, having pelvic abscess. Dieffenbach (*Operative Chirurgie*) adopted this method of treating cancer of the rectum, and operated on thirty cases, in most of which the disease did not return for many years.

The operation gradually fell into desuetude and became one of the procedures seldom considered, because it had acquired a

traditionally bad name. Hence cancer of the rectum was looked upon as inaccessible to surgical interference, and was merely palliated, until the patient, after a few years' suffering, ended a miserable existence, from secondary stricture of the viscus. Of late years, however, attention has again been directed to this method of dealing with carcinoma of the rectum, especially since Billroth's operations have given such excellent results.

A case recently operated on by Dr R. J. Levis, in the Pennsylvania Hospital, seems to show that cancer of the rectum should be treated exactly as malignant disease of other portions of the body; that is, if the case be of rather recent standing and not involving surrounding structures to a great extent, if the patient be in fair general condition, and if he be willing to take the risk of immediate inflammatory results, the surgeon should give him the chance of securing comfort for a few years, even if there be every probability of the final return of the malignant process.

The patient, who was aged 60 years, stated that he had first noticed the existence of some rectal trouble about a year previous to his admission, which occurred 29th December 1876. The first symptoms were pain and the occasional passage of pus and blood, accompanied by constipation. At times, during this period, he had difficulty in urination, though the desire to micturate was not very frequent. He had never had any form of venereal disease. On making a digital examination, Dr Levis found a nodulated mass, about $2\frac{1}{4}$ inches in width, occupying the anterior rectal wall and extending to a limited extent laterally, rather more, it would seem, to the patient's left than to the right. It extended about $2\frac{1}{2}$ inches up the gut, but did not involve the anus, which was free from disease, except that there were a few hæmorrhoidal tumours, some of which, according to the patient's account, had been strangulated by a ligature a few weeks previously. It was easy to hook the point of the index finger over the top of the cancerous mass; the posterior wall was free from involvement, and there was no stricture, though, of course, the calibre was slightly lessened by the nodulated thickening of the anterior surface of the cavity of the rectum. The man's lungs, heart, and urine appeared normal, and there was no stricture of the urethra.

On 6th January excision of the rectum was done, and the whole cancerous mass removed. After a large metallic bougie had been introduced into the bladder, to serve as a guide to the position of, and to steady the urethra, an incision was made from the base of the scrotum to the coccyx encircling both sides of the anal aperture. The hand of the operator was then introduced behind the bowel into the hollow of the sacrum, in order to tear the rectum loose from its posterior attachments. By means of the finger and a pair of serrated scissors, Dr Levis broke up the adhesions all around the rectum to the front, where it was more firmly attached, on account of the disease, to the prostate gland and neck of the bladder. The cancerous gut was next carefully dissected from these

parts, exposing to view the prostate and the lower part of the bladder. While this was being done the vessels were carefully ligated as soon as divided, and double sutures passed through the skin into the rectum, above the proposed line of excision. These were not fastened, but left in position, to give perfect control of the parts. When the rectum, including the cancerous portion, had been thus carefully and thoroughly isolated, the gut was drawn forcibly down by seizing the tumour, and the scissors employed to cut through the walls of the bowel; a section of the rectum, three inches in length, was thus excised, leaving behind a perfectly soft and smooth mucous membrane. The sutures were then skotted, and some extra ones applied to keep the gut in position, which was by this means securely stitched to the surrounding integument. The whole operation was completed with the loss of about one fluid ounce of blood, because the ligatures, some half dozen in number, were applied as each vessel was cut, and the operation suspended until the hæmorrhage was thus controlled. The wound was then dressed with carbolized oil. The growth was examined microscopically by Dr Morris Longstreth, pathologist of the hospital, and found to be an epithelioma. The patient reacted perfectly after the operation, and was treated with small doses of stimulants and anodynes and large doses of quinine, until twenty-four hours had elapsed, when he returned to the tonic doses of iron and quinine that he had taken before the operation. His urine had to be removed by catheterization for ten or eleven days, and for a number of days was chocolate-coloured, from the admixture of blood. His temperature on the evenings of the second and the fourth days after the operation had reached 102° and $101\frac{3}{4}^{\circ}$, but afterward steadily declined, reaching $98\frac{1}{2}^{\circ}$ on the morning of the tenth day; after this time it remained below 100° , with the exception of once, when it attained that height. The wound suppurated pretty freely, without any burrowing of pus, and there was slight tympanitis for a few days, but the patient had not sufficient pain to require more than an occasional opiate at night. On the seventh day his bowels were freely opened for the first time by castor-oil, and by the tenth day all the sutures were removed. These, by the way, in many instances had pulled loose long before, so that I doubt much whether much is gained by attaching the gut to the integument, which at least has the disadvantage of favouring the retention of pus in the ischio-rectal space. Fifteen days after the operation the patient was allowed to sit up, and his convalescence from the grave surgical procedure of excision of the rectum was secure.

The condition of the patient on 1st March 1877 was as follows: The man has habitual constipation, and is obliged to have continual resort to laxatives, to keep the fæces from being retained too long, for then the hardened masses give pain when expelled. To accomplish this, he uses compound rhubarb pills, according to indications, and occasionally employs enemata of soap and water; by this

means he has a passage every few days. If the contents of the bowels are very loose after an active purgative, he is apt to soil his clothes, but otherwise he has perfect control of defecation, and even seems to exercise slight control over the escape of flatus. By care he has avoided an involuntary evacuation of fæces for weeks, but the call to stool must be rigidly obeyed. He must stand not upon the order of his going, but go at once.

An examination of the parts shows some contraction at the anus, as would be expected from the cicatricial nature of that orifice; and from the anus to the lower end of the gut the cavity is lined with what has the appearance of mucous membrane. When the finger is introduced, it at times passes into a sort of *cul de sac* alongside of the inferior end of the rectum, but there is no difficulty in passing directly into the bowel.

The case with which the operation was performed in this case, the slight inflammatory fever following, the rapid convalescence of the patient, and his excellent health since, without even being troubled with incontinence of fæces, certainly presents this operative procedure in a much more favourable light than would be expected. What, then, are proper cases to be submitted to extirpation of the rectum? Lisfranc considered it improper to undertake excision if the index finger could not reach the upper limit of the disease, and if the surrounding tissues were involved in the carcinomatous disease so much as to prevent the surgeon pulling down the intestine after the lower end had been removed (Malgaigne's *Operative Surgery*, American edition, p. 439). According to Dieffenbach, it is not to be considered when the patient is exhausted and secondary glandular involvement has occurred (*Operative Chirurgie*, ii. 707). These contraindications are certainly important, and yet cases are reported which show that these apparently necessary precautions may, at times, be disregarded. Nussbaum has several times excised, along with the rectum, a piece of the bladder as large as a dollar, and the wound has healed, as in cases of lithotomy, without causing a urinary fistule. In 1866 he operated on a case of epithelioma of the rectum of five years' standing, where there was stricture of the bowel and disease of the neighbouring viscera. Four inches of the intestine, the prostate gland, the prostatic urethra, and a portion of the neck of the bladder were excised, with perfect recovery for three years, except that the patient was troubled with frequent micturition. This does not seem to have prevented him from being quite comfortable, and at times doing a little work (*Half-yearly Abstract of the Medical Sciences*, vol. li. p. 271, 1870). The suffering attendant upon carcinomatous disease of the anus and rectum, from the chronic constipation, the painful defecation, the continual tenesmus, and the exhausting discharges of pus and blood, render the patient a pitiable object, and almost any risk which promises alleviation is justifiable. There is no disease, unless it be cancerous stricture of the œsophagus, that is at all comparable in mental and physical

distress to cancer of the rectum. When the suffering is intense in cases where the adjacent viscera are implicated, Esmarch (*Handbuch der Allgemeinen und Speciellen Chirurgie*, Von Pitha und Billroth, Bd. iii. abt. 2, lief 5 [2] sec. 187) even recommends partial excision, and considers applicable the method of Volkmann and Simon, who scoop out with sharp spoons as much of the heterologous growth as possible. By this method a great portion can be extirpated without the occurrence of hæmorrhage, and if cauterization be employed in addition, alleviation can be obtained for a long period, even as in cases of uterine cancer. At any rate, this as a palliative measure is as beneficial as clotomy, and withal is less repulsive to the feelings. If the cancerous disease be developed as a complication of old irreducible prolapsed rectum, extirpation, as is readily appreciated, is less difficult, and the prognosis more favourable. Dieffenbach performed such an operation on a man aged fifty years, but though making the above statements does not give the final results of the case (*Operative Chirurgie*, ii. 709-711).

(To be continued.)

Part Fifth.

MEDICAL NEWS.

THE ANTI-VIVISECTION ACT.—The unfair way in which the Anti-vivisection Act is being worked was brought before the General Medical Council by a letter from one of the secretaries of the new Physiological Society. No less than nine well-known physiologists having complied with the provisions of the Act and sent up proper certificates, etc., found themselves either in the position of being simply refused their licenses or having them so delayed as to seriously interfere with their object. Had they been nine publicans who had been treated thus, the Commons House of Westminster before now would have rung with indignant speeches from several of its beer-born members. But matters of health and sanitation are said to be purely medical matters, and thus disease is left to be fought by those whose livelihood depends upon its presence, while those who furnish the patients seem to think it is no business of theirs. Such being the case, it is no matter for surprise that the progress of sanitary science is as slow as it is: it redounds to the credit of the profession that any progress is made at all.—*Philadelphia Medical Times*, 7th July 1877.

DOCTORS IN THE ENGLISH ARMY.—According to official documents, the English army has one surgeon for every 202 men, and the civil population only one for every 1276 inhabitants. The number of doctors, which, in 1851, was 9·7 for every 10,000, was, in 1871, only 8·3. In the army there are 49 doctors for every 10,000 men. It is a fact well known that the British Government finds it difficult to find competent men to fill the vacancies in the medical staff of the army. As early as 1851 the medical assistance

rendered to the population was very deficient, and it is not very much better in 1876. To the great majority of the people who are unable to pay large fees, medical attendance is almost entirely inaccessible.

In Ireland the number of physicians was four for every 10,000 inhabitants in 1851, it was five and it was six in 1871. In Scotland, as in England, the number has diminished: in 1851 there were 7.2 for every 10,000; in 1861 there were 6.1, and in 1871 only 5.2. The number of physicians is very unequally distributed, and the poor are attended by ignorant quacks and men without diplomas.—*New York Sanitarian*, July 1877.

LIST OF ARMY MEDICAL CANDIDATES who were successful at both the London and Netley Examinations, having passed through a course of instruction at the Army Medical School, Netley, August 1877.

Order of Merit.	Names.	Marks.	Order of Merit.	Names.	Marks.
*1.	Mullen, J. J.	5718	10.	Kenny, W. W.	3895
2.	Murphy, F. H. S.	5098	11.	Ellis, P. M.	3772
3.	Johnston, W. T.	4656	12.	O'Sullivan, P. J.	3758
4.	De Caux, F.	4595	13.	Hogan, E. M. A.	3671
5.	Browne, A. W.	4193	14.	Irwin, A.	3310
6.	Hodson, R. D.	4138	15.	Kearney, T.	3193
7.	Powell, C. K.	4075	16.	McCarthy, W.	2831
8.	Kirkpatrick, H. C.	4038	17.	Brodie, J. F.	2773
9.	Armstrong, J.	3970			

* Gained the Herbert Prize.

LIST OF CANDIDATES FOR THE INDIA MEDICAL SERVICE who were successful at the Competitive Examination at London in February last, and who have undergone a course of instruction at the Army Medical School, together with the total number of marks obtained at the examinations at London and at Netley.

No of Marks.			No. of Marks.		
*1.	Rogers, T. K.	5613	15.	Elcum, D.	4443
2.	Hatch, W. K.	5382	16.	Mullen, D.	4399
3.	Owen, W.	5380	17.	Taa e, R J.	4337
4.	Masau, H. D.	5280	18.	Robinson, E. L.	4336
5.	Gillies, W.	5060	19.	Nelis, J. A.	4315
6.	Jack, D. M.	5050	20.	Bonton, G. C.	4096
7.	Coury, W.	4991	21.	Smyth, W. B.	4033
8.	Nailer, H. A. F.	4915	22.	Chatterjee, N.	3945
9.	Kirtikar, K. R.	4830	23.	Crofts, A. M.	3939
10.	Kellie, G. J.	4760	24.	Crofts, J.	3895
11.	Hancock, G. J.	4673	25.	Coates, W.	3894
12.	Basu, D.	4635	26.	Blood, J.	3892
13.	Mackenzie, A. W.	4608	27.	Dutt, B. L.	3767
14.	Mullane, J.	4471			

* Gained the Martin Memorial Medal.

LIST OF CANDIDATES WHO RECEIVED THE DEGREE OF DOCTOR OF MEDICINE, THE DEGREE OF BACHELOR OF MEDICINE, AND THE DEGREE OF MASTER IN SURGERY, IN THE UNIVERSITY OF EDINBURGH, ON WEDNESDAY, 1ST AUGUST 1877.

Degree of Doctor of Medicine, under the New Statutes.—Andrew Balfour, Hong Kong, M.B. and C.M. 1873; James Barbour, Scot-

land, M.B. and C.M. 1872; Byrom Bramwell, England, M.B. 1869; John William Bramwell, England, M.B. 1873; John Cameron, Scotland, M.B. and C.M. 1872; Reginald Kennedy Casley, England, M.B. and C.M. 1874; John Henry Clarke, England, M.B. and C.M. 1875; James Crabb (M.A. Aberd.), Scotland, M.B. and C.M. 1875; Andrew Stark Currie, Scotland, M.B. 1874; James Crompton Eames, England, M.B. 1875; William Fairbanks, England, M.B. and C. M. 1874; William Garton, England, M.B. and C.M. 1875; Robert Alexander Gibbons, Canada, M.B. and C.M. 1874; Alexander Henry, Scotland, M.B. 1874; James Holmes, Berwick, M.B. and C.M. 1875; William Allan Jamieson, Scotland, M.B. and C.M. 1865; John Johnston, Scotland, M.B. and C.M. 1874; Thomas Johnstone, Scotland, M.B. and C.M. 1874; Abraham Emrys Jones, Wales, M.B. and C.M. 1875; Richard Anderson Lambert, France (B.A. Trinity College, Dublin), M.B. 1874; James Little, England, M.B. 1874; Thomas Maccall, Scotland, M.B. and C.M. 1873; George Hunter Mackenzie, Scotland, M.B. and C.M. 1873; Frank Nankivell, England, M.B. and C.M. 1875; Charles Arundel Parker, England, M.B. and C.M. 1873; Joseph Channing Pearce, England, M.B. and C.M. 1871; Robert Burnet Porteous, England, M.B. and C.M. 1868; Henry Prescott Roberts, England, M.B. 1868; Robert Saundby, England, M.B. and C.M. 1874; John Halliday Scott, Scotland, M.B. and C.M. 1874; Robert Scott, Scotland, M.B. and C.M. 1874; Roger St Clair Steuart, Scotland, M.B. and C.M. 1876; Graham Steel, Scotland, M.B. and C.M. 1872.

Degree of Doctor of Medicine under the Old Statutes.—Alexander Tweedie Stodart, Scotland.

Degrees of Bachelor of Medicine and Master in Surgery.—John Adam (M.A. Edin.), Scotland; Robert Smail Anderson, Scotland; James John Archbold, England; Henry Morton Baker, England; Isaac Bayley Balfour, (Sc.D. Edin.), Scotland; Robert Baxter, Scotland; William Baxter, Scotland; Charles George Beaumont, England; De Burgh Birch, England; Alexander Black, Scotland; George Black, Scotland; Robert Johnstone Blanchard, Nova Scotia; Alfred Adolphus Boucaud, Trinidad; Arthur Henry Boucher, England; Edward Salisbury Brander, India; Henry Briggs, England; Thomas Monck Burn-Murdoch, Scotland; Francis Mitchell Caird, Scotland; Augustus Barclay Calder, Scotland; John Cameron, Scotland; Duncan Carmichael, Scotland; William Barstow Carstairs, India; William Joseph Christie, America; Herbert Edward Daniell, England; Ellis Thomas Davis, Wales; Henry George Deverell, India; William Dick, Scotland; Thomas Dixon, Australia; Charles Edward Douglas, India; Harry Drinkwater, England; Lionel Druitt, England; Matthew Robinson Fairer, England; Thomas Ferguson, Scotland; Nelson Spershott Foster, England; William Simpson Frew, Scotland; John Fyfe, Scotland; William Robert Gibson, Scotland; John Gloag, Scotland; Robert Hardie, Scotland; David Berry Hart,

Scotland; Alfred Joseph Harvey (B.A. M'Gill), Newfoundland; George Henderson, Scotland; John Oke Horden, Canada; Welby P'Anson, England; Charles Rumney Illingworth, England; Peter Pearson Johnston, England; Robert Colquhoun Johnston, Scotland; Walter Smith Kay, Scotland; Edward Law, England; George Le Fevre, England; Edward Jodrell Leapingwell, England; Thomas Preston Lewis, England; Andrew Walker Herdman Lindsay (B.A. Dalhousie), Nova Scotia; Arthur Charles James Rudd Lundy, Canada; James Abercrombie Lyon (M.A. Edin.), Scotland; Stanhope Hastings MacCulloch, Australia; Colin Mackenzie, Scotland; Daniel Mackenzie, Scotland; Charles M'Laren, England; James Farquharson MacLaren, Scotland; Henry James M'Laughlin, India; Roger M'Neill, Scotland; Hugh William Mann, Scotland; James Inglis Mason, Scotland; John Mowat (M.A. Edin.), Scotland; William Murdoch, Scotland; Walter Murray, Scotland; Peter Mitchell Penman, Scotland; Albert Plain, Wales; David Thomson Playfair, Scotland; Thomas Henry Pope, India; George William Potter, England; Robert Purdie, England; William Cash Reed, England; William Richardson, England; James Robbins, England; John Rowland, Wales; John William Rowland, England; Cubitt Sindall Rundle, India; James Scott, Scotland; Julius Henry Shannon, Barbadoes; Oliver Cromwell Shaw, England; Thomas Henry Smith, England; James Snadden, India; Douglas Edward Stewart, Tasmania; John Stewart, Nova Scotia; Johnson Symington, England; Charles Vernon Taylor, England; Alexander Thom (M.A. St. And.), Scotland; John Thomson (M.A. Edin.), Scotland; Francis Wyatt Thurnam, England; James Turnbull, Scotland; Charles Walter Van Geysel, Ceylon; Howel Holland White, Wales; John Whitsed, England; Robert Lamley Williamson, England; Ralph William Wilson, England; Russell Elliott Wood, Scotland.

Degree of Bachelor of Medicine.—Edward Allen, England; James Milne Chapman, Scotland; Jean Aristide Clément Daruty, Mauritius; Horace Flint, England; Duncan Forbes (M.A. Edin.), Scotland; Benjamin Jones Massiah, England; Walter James Strang (M.A. Edin.), Scotland.

Degree of Master in Surgery.—Hy. Alexander, M.B. 1874, Scotland.

The Ettles Prize for 1877 has been awarded to William Richardson, M.B. and C.M.

The Syme Surgical Fellowship has been awarded to William Watson Cheyne, M.B. and C.M. 1875.

OBITUARY.—We regret to notice the death of Dr J. W. MORISON of Kirkcaldy, which took place on Friday, 18th August. He died at the early age of 45 of typhus fever, caught in the exercise of his profession—another name added to the too-long list of those who have fallen martyrs to duty. He was Parochial Medical Officer for Kirkcaldy and Abbotshall, and Medical Officer of Health for the burgh of Kirkcaldy.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*On Tubercle in the Human Lung.* By D. J. HAMILTON, F.R.C.S. Ed., Demonstrator of Pathology, University of Edinburgh.

(Read before the Medico-Chirurgical Society of Edinburgh, 6th June 1877.)

DURING the last few years investigations into the nature of tubercle have been very numerous, and have added much to our former knowledge of the subject. It may be truly said that previous to Laennec's time we knew nothing of tubercle, and since then our experience has been undergoing a transitional development, which, up till a few years ago, seemed only to have added obscurity instead of throwing new light on what must be considered one of the most difficult problems in physiological pathology. The confusion which has always existed, and which still prevails very generally, is, no doubt, due to a want of accuracy in investigations into its structure and development. So many products of entirely different constitution have been called tubercular that one is puzzled to know what the name signifies, where we are to begin, and where to end in calling a new formation "tubercle." It is chiefly in exactly defining what tubercle *is* that the greatest progress has been made during the last year or two, and as a knowledge of the development of a part is inseparable from a thorough acquaintance with its structure, we are now coming to see how it is that this mysterious body is produced, and what structures are primarily involved in its formation. The importance of the inquiry in a therapeutical sense need hardly be mentioned, for, as all modern therapeutics is dependent on physiology and pathology for its advancement, it seems only natural that one of the first points which should engage our attention is the structure and development of the morbid part we are wishing to act upon.

It would be merely begging the question to discuss this subject without, in the first place, asking, "Is there such a thing as tubercle? Is there any definite structure which is so constant that we can immediately pronounce it to be tubercular?" If there is not, if there is only an indefinite arrangement of parts

which does not in any essential particular differ from many more inflammatory deposits, then we are not entitled to give this a distinctive name. But if, in examining certain morbid organs, we can find an arrangement of the histological elements which is always present, and which is so remarkable that no one can fail to perceive it, then a special name, either "tubercle," or any other which may be hereafter proposed, conveys some meaning; the term indicates something the constituents of which we have previously defined. It will be my endeavour to show in this paper that such a constant structure is found in all truly tubercular organs,—a structure so well marked, that after one has had a little experience it can be at once recognised.

In order not to trespass too much on the time and patience of the Society, I have limited this somewhat wide subject to tubercle in the lung, and more especially considered in regard to two points: (1.) The structure of tubercle in the lung. (2.) Its development in the lung. What I have to say in regard to the first of these also holds good of tubercle in other organs, but its manner of development varies according to the particular organ in which it is situated. The naked-eye appearance is no sure indication of the tubercular nature of a deposit. It is by trusting to rough-and-ready methods of examination such as this that mistakes have taken place. One might as well say, that because two salts resemble each other in their outward appearance they must therefore have the same chemical composition. The difference between the tubercular and tuberculoid diseases is quite as great as that between two such salts. [Two specimens of so-called "miliary tubercle" were here shown to the members of the Society.]

In looking at these two specimens, few members of the Society will hesitate to pronounce both to be so-called "miliary tubercle" of the lung, and in the pathological theatre these no doubt would be both called by this name; and, further, the name would be intended to signify what is known as "interstitial tubercle." What, however, are the actual facts revealed by more careful examination? The lung containing the extremely minute nodules is a typical instance of tubercle of the lung, while these nodules seen in the injected specimen are merely due to catarrhal pneumonia; and, what is still more curious, neither of them is interstitial, that is to say, formed in the interstitial fibrous tissue, but both are produced within the pulmonary alveoli.

What then is the difference between the two? What does the one possess which the other does not?

It is to Continental pathologists that we are chiefly indebted for what we have accurately ascertained on this point. In this country tubercle has been known as a lymphoid or lymphadenoid deposit, a name which may be applied to almost any subacute inflammatory formation. It does not distinguish tubercle as anything special, and, did tubercle consist of nothing more

than this, we could only look upon it as of an inflammatory nature. Perhaps the first accurate description of tubercle which is on record is that given by E. Wagner in his excellent work on Lymphadenoma. It has been proved from subsequent researches that what he originally described as tubercle like lymphadenoma is in reality the structure of all truly tubercular products. Schüppel's work on tubercular glands was published almost contemporaneously, and, as he himself says, he was astonished to find that Wagner had described appearances identical with those which he had found. Since these two observers published their results in 1871, Hering has amply confirmed the conclusions which they arrived at, so that there can be very little doubt of the truthfulness of their description.

To the naked eye, true tubercle of the lung, whether primary or secondary, forms a nodule of the size of a pin's head, elevated above the surface of the lung tissue, extremely sharply isolated from it, and invariably of a rounded shape. The nodules do not tend to run together, and in their distribution they follow no definite course. They are not generally more abundant at one part of the lung than another, and seldom, if ever, present any caseation, the reason of this being that they are supplied with bloodvessels. If a portion of such a lung be prepared, and a large and extremely thin section be made through it, the nodules will be found to have a very peculiar appearance—an appearance so remarkable that it cannot easily be mistaken for anything else. Each nodule is a compound structure made up of two, three, or more "giant-cell systems." This "giant-cell system," in the first place, contains an enormous giant-cell at its centre, or at one side. I believe that one or more of these giant-cells will be found in every system. They consist of enormous masses of extremely granular protoplasm, generally of a rounded or oval shape, and they each frequently contain from ten to one hundred nuclei and several vacuoles. From their outer border comes off a fringe of delicate processes, which, running outwards, branch, anastomose, and produce a network or reticulum, in whose meshes lie cells of different kinds. These cells are either epithelioid, leucocytes, or small giant-cells, and each space of the reticulum generally contains a cell of one or other variety. The walls of this network, consisting in reality of the branching processes of the giant-cell, have invariably the same granular appearance as the protoplasm of the giant-cell itself. In fact, the whole system resembles very much some of the wonderful transformations seen in the amœba, and, no doubt, the protoplasm composing it is endowed during life with similar powers of expansion and retraction. This protoplasmic reticulum is limited externally by a delicate band of fibrous tissue and spindle-cells, while outside of this again is a dense mass of leucocytes, in all probability of inflammatory origin. The band of fibrous tissue situated at the border of the reticulum

gives the giant-cell system a rounded shape, and, as a macroscopic nodule is made up of several of these giant-cell systems, it also has a distinctly rounded shape, and is sharply isolated from neighbouring parts. In the well-marked miliary tubercle of children, the nodules are very constantly developed in the proximity of a branch of the pulmonary artery, and not infrequently an offshoot from this can be traced into the nodule itself. Miliary tubercle of the lung consequently seldom, if ever, undergoes marked caseation, and if a nodule, or series of nodules, of miliary size, has a tendency to become yellow in the centre, it ought very much to predispose to our diagnosing the lesion as catarrhal pneumonia, and not miliary tubercle. In other organs this is different, caseation being extremely frequent where the nodule reaches any considerable size. The reason of this is, that tubercle in most of the other organs arises in connexion with the small arterial twigs, which, becoming blocked up by proliferating cells, are rendered impervious to the blood-current. The tubercle thereby loses its source of nourishment, and consequently undergoes a retrograde metamorphosis.

In what classes of cases do we find tubercle in the lung? I believe mainly in two:—

(1.) In a certain number, not all, of the cases of so-called miliary tubercle in the lungs of children.

(2.) In certain instances of chronic catarrhal pneumonia in adults and children, more especially where this is accompanied with interstitial thickening. It is, therefore, in regard to the lung, either a primary formation, as in miliary tubercle in children, or it is secondary to a chronic catarrhal pneumonia, where caseous material is abundant. I would be especially careful, however, not to accept it as true that all instances of so-called miliary tubercle are really tubercular. I believe that many of them show no tubercular structure whatever, but are merely disseminated nodules of catarrhal pneumonia in an early stage. Then, again, true tubercle of the lung is supposed to be a disease almost exclusively confined to children. My own researches have led me to the conclusion that it occurs quite as frequently, if not more so, in adults, but is often obscured by the coexistence of a colloid pneumonia or interstitial thickening. The most typical tubercular structure that I have ever seen in the lung was taken from an adult, and I have often been surprised to find that the so-called gray gelatinous nodules in the lungs of children were nothing more than collections of caseating catarrhal cells within a group of alveoli. One can detect microscopically in them the commencing caseous degeneration, when it is totally invisible to the naked eye; and if the lung tissue be examined all through, one can see that there is no attempt at the formation of a higher structure, the catarrhal products passing into caseous decay as soon as they have distended the alveolar cavities. In all such

cases the greatest caution is necessary in pronouncing a structure to be tubercular, and the mere appearance of small gray gelatinous nodules by no means indicates that they are so. Certain instances of catarrhal pneumonia, in an early period of their development, are extremely deceptive, and if caseation has not advanced to any extent the nodules which are produced by it resemble in many particulars so-called "miliary tubercle." Not only do the actual nodules resemble miliary tubercle, but their distribution may be sometimes as diffuse throughout the lung tissue as in a case of veritable tubercle. One must therefore restrict the name "miliary tubercle" to the naked-eye appearance, without reference to its actual structure; it is merely a convenient term to employ in describing a new formation, having certain peculiarities as to the size and shape. I have employed the term "secondary tubercle" to indicate a truly tubercular new formation which occurs in certain instances of chronic catarrhal pneumonia. It is not found in all such cases, but more especially where there is a great amount of interstitial thickening. By far the greater number of cases of chronic catarrhal pneumonia, or ordinary pulmonary consumption, *show no tubercle* in the lung whatever. In a certain number, however, having the peculiarities just mentioned, namely, great interstitial thickening, tubercle is frequently abundant. In the disease known as fibroid phthisis, or what has been termed "*peribronchitis chronica*" by Virchow, I have almost invariably found tubercle present. This disease is generally accompanied with chronic pleurisy, and from the under surface of the thickened pleura fibrous bands spread along the lobular septa into the lung substance, constricting the air vesicles which they surround, and dilating the bronchi, to one side of which they are generally attached. It is in the neighbourhood of these dilated bronchi, or pseudo-phthisical cavities, that the tubercle is produced, its presence being in all probability determined by the situation of the peribronchial lymphatics. In ordinary cases of catarrhal pneumonia with phthisis, however, tubercle is also sometimes found, and very often, as Niemeyer has described, in the neighbourhood of cavities. I do not think that it is possible to distinguish this tubercle from the surrounding nodules of recent non-caseous catarrhal pneumonia by means of naked-eye examination. The bodies which are generally pointed out as probable tubercles almost invariably turn out to be merely catarrhal pneumonia nodules. The truly tubercular nodules are generally placed in the midst of any newly-formed fibrous stroma, and are concealed by it. They are comparatively rarely present, but, without doubt, do occur in certain cases of ordinary phthisis.

In summing up this portion of my paper, I would therefore state that undoubtedly a distinct structure, which we can call tubercle, does occur in the lung, either in the form of a primary lung affection, or secondary to chronic catarrhal pneumonia.

A certain number of the so-called instances of "miliary tubercle" in children are tubercular, but by no means all.

True tubercle is a disease which affects adults quite as frequently as children, if not more so.

In examining the second of the two considerations with which we set out, viz., "How is tubercle produced in the lung?" we shall have to glance for one instant at the normal structure of an alveolus, and I always think that the best way to look at it is to suppose the whole alveolar structure of the lung unfolded and laid out as a flat membrane. It would then almost exactly resemble a serous membrane, such as the mesentery or pleura. It is covered with a single layer of epithelial, or quite as properly endothelial cells, which are individually very large, but extremely delicate, exactly as in the case of the serous membranes just mentioned. Between the borders of the endothelial cells are small openings or pseudo-stomata, and underlying them is a plexus of lymphatic spaces and bloodvessels. All these constituents one meets with in a serous membrane, so that the analogy between the two is very close. I also hold that the formation of tubercle in each is alike. The development of tubercle can be studied much more easily in the serous membranes than in any other situation. Suppose we induce an artificial tuberculosis of the peritoneum, having identically the same structure as that which we have just described in the human lung, by injection of caseous material into the abdominal cavity: What is the first change that takes place? The endothelium in certain localized areas undergoes proliferation to produce a little nodule. This nodule is generally rounded or oval, and situated around a stoma. A division and proliferation of the superficial endothelium is what takes place first in the omentum or mesentery. Exactly the same occurs in primary tubercle of the lung. A division and proliferation of the alveolar epithelium take place first, and from this a number of large rounded or pear-shaped elements are produced, highly nucleated, and very often attached by a long stalk-like process to the alveolar wall. These accumulate in the same way as on a serous membrane, and the proliferation similarly affects a limited area. Groups of alveoli are accordingly filled up and distended with these large actively proliferating cells. Up to this period there is a certain resemblance between tubercle and catarrhal pneumonia; I have almost invariably found, however, that the cellular elements in tubercle are larger and much more active than those in catarrhal pneumonia, and they are usually not so closely aggregated together. Very soon, however, a differentiation between the two begins to show itself. The infiltration in the case of catarrhal pneumonia becomes cheesy, and undergoes a retrograde process from the first, while the infiltration which is destined to form a tubercle becomes more highly organized, instead of degenerating. This organization is brought about in the following

manner: Either one of the proliferating cells enlarges, or several of them run together to form a giant-cell, and this latter has very rapidly introduced to it from without, or generates from within, numbers of nuclei. The next step is, that processes are given off from this giant-cell, which, running outwards, branch and constitute a reticulum. This reticulum encloses certain of the remaining proliferating cells which resulted from the division of the alveolar epithelium, and also a few leucocytes, which, in all probability, have exuded from the bloodvessels; while, at the periphery of the reticulum, a concentric band of fibrous tissue gradually incorporates itself with the alveolar wall and forms the outer boundary of this "giant-cell system." Similar "giant-cell systems" are produced in contiguous alveoli, and the whole little group is united into a single nodule by leucocytes and bloodvessels.

This is an account of the formation of tubercle very different from that usually taught by the Virchow school of pathologists. The more one examines tubercular new-formations, the more one becomes convinced that there is no such thing as an interstitial origin in the sense indicated by Virchow. It is now a generally-admitted fact, that all primary cancers arise from an epithelial surface; and I believe before long it will be accepted as equally true that tubercle always arises from an endothelial surface, or one corresponding to it. It might be urged that, as tubercle of the lung, secondary to catarrhal pneumonia, is found within the newly-produced interstitial tissue, the endothelial origin in this case is not borne out. I cannot trespass so far on the time of the Society as to lay before them the facts bearing on this point, but I may say that everything I have seen tends to convince me that this secondary tubercle is not produced from the interstitial tissue, but from the endothelium of the lymphatic vessels ramifying in the alveolar and bronchial walls. Their endothelium undergoes the same proliferative changes as that of the alveolar cavities, and the giant-cells are formed in the same way from an overgrowth of one or more of the proliferating endothelial cells. The cause of the formation of the tubercle in this case is the absorption of the cheesy *débris* from a neighbouring softening cavity. This passes along a lymphatic vessel, irritates its endothelium, and excites it to proliferation. In this the analogy between the alveolar wall and a serous membrane is still borne out. We all know the condition of the neighbouring lymphatics in the ordinary phthisical ulcer of the intestine, which is merely a caseous follicular catarrh. They are marked out as distinct white cords in the peritoneum opposite to the ulcer, and along their course are to be seen nodules of true tubercle. In secondary tubercle of the lung I believe the conditions are exactly the same: a catarrhal pneumonia undergoes caseation in the first place, the lymphatics become afterwards infected, and produce secondary tubercle.

The scope of my paper does not lead me to speak of tubercle in other organs, but I think there is very little doubt that the same laws hold good in its development in them. And, as a general statement, we may say that in all organs which possess a series of ducts, lined by a parenchyma, there may be developed, as in the lung, two classes of affections, which at first sight might be mistaken for one another. The one class includes those lesions which are the result of a caseous catarrh of the ducts, the other class refers to the truly tubercular formations. The so-called phthisis of the kidney, testicle, and intestine are not tubercular, but merely correspond to the caseous catarrh and phthisis of the lung. In these, however, as in the lung, tubercle may in some instances be developed in the neighbourhood by a process of infection.

ARTICLE II.—*Note of a Case of Hematocoele simulating a Retroverted Gravid Uterus.* By Dr C. E. UNDERHILL.

MRS M., married, a thin delicate woman, aged 30, four children, two miscarriages, the last miscarriage having been twelve months ago, came to see me on 16th June 1877 in the evening; she complained of great pain in the lower part of the abdomen, aggravated by walking; difficulty in defecation, with severe pain both before and after the motions passed; irritation of the bladder, and inability to pass more than a small quantity of water at a time.

She had been quite well, and, for some months quite regular, until the middle of March, when she menstruated regularly; she then missed seven weeks, and the courses appeared about 10th of May, and had lasted off and on ever since. There had been no severe flooding; the pain had begun slightly at the time of the monthly courses reappearing, but had been getting much worse for the last three weeks; there was no history of any fainting attack or feeling of faintness.

The breasts were small and flat; there was no areola. The belly was found to be moderately distended, very sensitive and tender, resonant on percussion; a hard mass could be made out indistinctly immediately above the pubes, but an exact examination could not be made, owing to the tenderness.

On vaginal examination, the pelvis was found to be filled with a firm, resisting, somewhat elastic swelling lying immediately behind the cervix, which was small and hard, and pushing it forward and upward behind the symphysis pubis; the posterior lip of the cervix seemed to pass directly into the substance of the swelling. The latter was very tender, and the whole mass appeared to be slightly movable. Examination by the rectum showed that the tumour filled the cavity of the pelvis, and nearly closed the canal of the gut. The tenderness, both internal and external,

prevented any information being gained by bimanual examination. Thinking that I probably had to deal with an inflamed and retroverted gravid uterus, after a gentle effort in the knee-elbow position to push up the tumour, the patient was sent home to bed.

17th June.—Pulse 100; bladder found by catheter not to contain more than an ounce or two of water; ordered castor-oil in the morning, and poultices, if the pains were severe; another cautious attempt to put up the mass was made, but the pain caused by the slightest pressure compelled me to desist.

On 18th June, finding matters in the same state, I made a more thorough examination under chloroform, with the kind assistance of Dr John Playfair. Above the brim of the pelvis could be felt a hard lump, reaching for about two inches above the pubis, and passing backwards and downwards; this lump was evidently connected with the tumour felt in the vagina. A prolonged examination discovered that the body of the uterus was lying on the top of the mass, and the fundus could be distinctly felt through the abdominal wall; with one finger on the os and the other hand on the fundus, the uterus was found to possess a very slight mobility independent of the mass filling the pelvis. I had now no hesitation in introducing a sound, and found the uterus to be $2\frac{1}{2}$ inches in length, and somewhat retroflexed, lying on the top of the large rounded mass. This mass, which filled up Douglas's space, and occupied the greater part of the pelvis, appeared to be about the size of a fetal head; being still in doubt whether it was a hæmatocele or an extra-uterine pregnancy, I passed in an aspirator needle, and drew off about half an ounce of darkish bloody fluid; the canula becoming soon obstructed with clot. The patient was considerably relieved, and for two days felt no pain, except when the bowels were moved. On the 22d, a severe attack of diarrhœa with mucous stools gave her great distress, from the tenesmus which accompanied it.

From this time the pain became more severe, and the general condition changed for the worse; pulse 120, temperature not taken, but skin felt hot, tongue white and dry, and the belly much distended with wind, and very tender. On vaginal examination, the swelling was found to be increasing in size, and only the posterior lip of the cervix could be felt without pushing the finger high up behind the symphysis.

27th.—Retention of urine; bowels loose, with great mucous deposit, but little, if any, fæces; opium and poultices. There was no shivering or perspiration.

28th.—Condition unchanged; great pain. I determined to puncture again, and perhaps to carefully incise the swelling after further examination under chloroform.

29th.—Dr Matthews Duncan kindly saw her with me; there was less pain than on the previous day, and the tumour evidently contained fluid; Dr Duncan advised delaying the puncture for a

day or two, and then, if there were no improvement, to make a small incision from the vagina, carefully avoiding any arteries. In the afternoon of this day the swelling opened into the rectum, and a large quantity of very fetid, grumous, bloody stuff came away; I saw only some traces of this, as all the cloths were immediately washed, owing to the offensive smell. The patient felt instant and great relief.

30th.—Pulse down to 100; general condition much improved; tenderness very much less, belly little if at all distended; per vaginam the tumour was found to be reduced to less than half its volume; on examination per rectum failed to discover the opening; dark bloody fluid with small clots continues to pass in small quantity.

4th July.—Small quantities of blood and clot still coming; tenderness of abdomen gone; pulse 80; tongue nearly clean; appetite fair; slept well. The change in the patient's general condition is very marked within the past few days.

6th.—No blood or clots have come since 4th; pulse and temperature normal; the uterus was found to be in natural situation and partially movable; behind it is a hard firm band of tissue, which is not tender, and which is all that remains of the large swelling felt a week ago; tumour not to be felt from the pubes; bowels regular and without pain.

4th August.—Examined to-day; no trace of the tumour is now to be felt; the uterus is in the natural situation and is movable; there is no pain or tenderness in any part of the pelvic organs.

Remarks.—There are several points of interest in this case—the most important rests on the question of diagnosis. To the feel it exactly resembled a case of retroflexed gravid uterus, and the history to some extent supported such a view. The hardness of the cervix, the great tenderness, and the hæmorrhage were against it; but only an examination under chloroform could have made the matter clear without putting in a sound at random. After intrauterine pregnancy was excluded, there still remained the doubt whether the swelling might not be an extrauterine pregnancy, the main point in favour of this view being the continued growth in size after the tapping and the severe constitutional symptoms which accompanied it; against it were the facts that the uterus was not enlarged, and the cervix was not all softened, and the character of the fluid drawn off by the aspirator. None of these points, however, nor all of them together, were decisive. I inclined decidedly to the opinion that it was a hæmatocele, from the history, the physical conditions, and the character of the fluid contents, but none of these were very characteristic; while the fact of the gradual increase of size beginning two days after the tapping was new to me as a sign of hæmatocele. The question of an abscess was considered but dismissed, inasmuch

as there were no shiverings or sweatings, as the tumour was not absolutely fixed when it first came under notice, and as it had not the feel of a pelvic abscess.

The position of the blood cannot be absolutely determined, but in all probability it was intraperitoneal, as almost all hæmatoceles of this size are found to be. Dr Duncan tells me that in all the hæmatoceles, four or five in number, which he has had an opportunity of dissecting, the fluid has been intraperitoneal. Lawson Tait¹ takes the opposite view as to the relative frequency of intra- and extra-peritoneal hæmatoceles, but I do not think the proofs on which his opinions rest at all conclusive, or strong enough to support his dogmatic statements on this question. But, independent of the relative frequency of the two conditions, the physical conditions of this case seem to point to an intraperitoneal lesion. The tumour occupied just the position of Douglas's space: it was round in outline and regular, it did not spread along the pelvis as it would naturally do had the blood been in the connective tissue; in fact, it behaved, as regards the pressure excited on the neck of the uterus, exactly as the body of a retroflexed gravid organ in the third month would have done. The rapidity with which the severe symptoms abated after the fluid had made its way into the bowel was very striking, as was also the complete disappearance of all physical signs within a month of the change for the better taking place.

As regards the treatment there is little to be said; had the tumour been incised per vaginam the same fortunate result would probably have occurred, but the risk of doing so in a case of uncertain diagnosis is obvious; the wisdom of waiting for a spontaneous opening and discharge of the fluid was fully justified by the event.



ARTICLE III.—*On the Auricular Impulse.* By GEORGE A. GIBSON, M.B., D.Sc., Resident-Physician to the Royal Infirmary, Edinburgh.

In a recent number of the *Lancet*, Dr Balfour has published a paper upon the so-called hæmic murmur, and the mechanism by which it is produced. To the contribution I added a case in illustration, along with some cardiograms and angiograms as graphic evidence upon a few of the interesting points. As a sequel to that paper, I now wish to bring forward a few facts relative to impulses having their seat over the situation of the left auricle.

These impulses may be caused by very different remote agencies, which, however, all tend finally to the same process of dilatation. In the wards under Dr Balfour's care there have been, during the last four months, 55 patients in whom a cardiac lesion was the

¹ *Diseases of Women*, 1877, p. 124 *et seq.*

prominent malady. Amongst these cases there were 15 instances of a murmur whose point of maximum intensity was situated in the second left intercostal space. This bruit was due to very different causes in the various patients, all of these, however, being capable of classification under three heads; this, of course, being understood to refer merely to the several examples in the wards. In the first place, there were a few instances of an auricular murmur originating in relaxation of the cardiac walls from a febrile state of the blood. Secondly, the atonic condition of the heart-muscle was attributable to deficient nourishment through impoverished blood, this arising either from defective formation in spanæmia, or from direct loss bringing on anæmia. Lastly, the agent was, in several examples, a cardiac or vascular lesion, which had produced dilatation.

It is not to be supposed that in all these cases a distinct pulsation was to be seen or felt at the seat of the morbid sound. On the contrary, it is comparatively rare to meet with a well-marked impulse. The heart is frequently too feeble to have a sensible beat at any point; the auricular dilatation also may not have proceeded so far as to allow of its approaching the chest-walls; or, finally, the parietes may be too dense to permit the transmission of the shock. From one of these reasons the murmur is very often unaccompanied by any tangible manifestation of its presence.

When a pulsation is present, it is usually traced by means of an instrument constructed on the principle of Marey's well-known cardiograph. The lever-stylet which writes on the moving paper rests near its fulcrum upon the membrane of a tambour, to which the movements are conducted by an elastic tube from another drum applied to the chest. It is found to be better in almost all cases to dispense with the membrane of this proximal tambour, and to fix the sides of the open vessel directly to the walls by means of collodion. In this way every motion which takes place in the cavity of the drum is communicated along the column of air to the membrane at the other end. It is true that the compressibility of the air and the elasticity of the membrane may cause some accidental vibrations of the lever, but this is greatly obviated by applying the open end of the tambour to the chest, as above described. There is thus a broad and fixed base, instead of a far more mobile one, of which only a small part could rest firmly on the body. In *Guy's Hospital Reports* for 1875, Dr Galabin, in his interesting paper dealing with the apex-beat, recommends a direct cardiograph, without the intervention of any air medium, as causing fewer adventitious waves. There are, undoubtedly, not so many quivers in the tracing, but that it is thus a more correct representation of the movements is open to dispute. For it is impossible by any instrument to ensure an equal and constant external pressure upon a moving internal organ, and it is, therefore, better to have as little as possible. The true wave amplitude of the impulses we

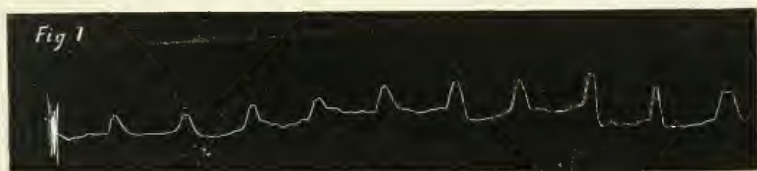
cannot hope to obtain; what we must have is each separate shock. From experience, also, with such an instrument as Dr Galabin describes, it is found to require more time for its employment, and to entail upon both physicians and patients much more trouble and annoyance. And as it is a *sine qua non* with all these apparatus to draw as little as is absolutely required upon the patience of either, an appropriate instrument is one which can be put to use in one moment, as the tambour-cardiograph.

I shall now narrate a case belonging to each of the classes arranged above. The auricular tracings belonging to the several examples will be shown with their respective cases, and a short criticism of these will afterwards be offered.

First in order stands an instance of auricular pulsation developed during the course of a febrile attack.

CASE I.—J. D., a female domestic servant, æt. 19, who, until eighteen months ago, had always enjoyed good health, and was then seized by an attack of acute rheumatism, was again, two months before her admission, laid up by a return of the same affection. At that time she suffered from pains in her joints and over her heart. Her pulse averaged 80, and although feeble was regular in rhythm. The precordia on account of her well-nourished condition showed no impulse whatever, and on palpation no apex-beat could be detected, but there was an impulse distinctly felt in the second left intercostal space two inches from midsternum. By percussion the right border of the heart at the level of the fourth rib was found to be exactly at the right edge of the sternum, and along the parasternal line at a distance of one inch to the left of that bone, the superior limit of the heart reached the lower border of the second rib. On auscultation over the mitral and tricuspid areas, a blowing systolic murmur had entirely replaced the first sound. This bruit was propagated over the whole cardiac area, but reached its greatest intensity just over the pulsation in the second interspace. The second sound was clear, that in the pulmonary area being accentuated.

Of the tracings taken from the impulse at the time, Fig. 1 is one



obtained in the recumbent position with the breathing fixed intermediate between inspiration and expiration. It shows a simple systolic wave caused by the distension of the left auricle on regurgitation through the mitral orifice. Fig. 2 was taken after exertion

in rising up and lying down, and with liberty to breathe freely. It illustrates the influence of the respiratory movements upon the auricle. The tracing begins during inspiration with merely an



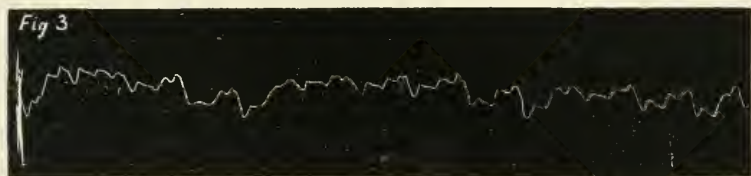
ascending line. At α expiration commences, and with it the impulse is seen to become distinct. With β a second inspiration, and with γ a second expiration begin. The tracing gives proof that in inspiration the muscular tension of the intercostals, and the gliding forwards of the lung on its expansion, prevent the auricle from being so close to the walls, and impart a rising curve themselves to the wave line. During expiration their tension being removed allows the auricle to approach the parietes and gives a sinking curve.

Chlorotic signs have been so fully dealt with in the paper above referred to, that it is unnecessary here again to revert to them as proof of dilatation in spanæmia. But the next is a most interesting example of auricular dilatation from loss of blood.

CASE II.—A. G., married, and 33 years old, had been, twelve weeks before admission, attacked by typhoid fever, in the course of which she was delivered prematurely of her sixth child. After the birth considerable flooding took place, and since then the patient had been gradually becoming weaker. When she entered the hospital her heart had an extremely feeble and fluttering action, the pulse having an average of from 150 to 180 beats per minute. In fact, she was sinking fast. After a few days' treatment with appropriate remedies she was much relieved and had sufficient strength to turn herself in bed. The pulse gained in force, and fell from the extreme degree of rapidity to about 90. In a short time longer she developed a mitral and a tricuspid regurgitant murmur, showing a return of strength to the heart. Latterly her condition has been as follows:—No impulse can be observed over the cardiac area, but a slight venous oscillation is present in the veins of the neck. On palpation the apex-beat is felt in the fifth intercostal space, three inches and a quarter to the left of the middle line, and the left auricle causes a pulsation in the second interspace, one inch and three-quarters external to the midsternal line. Both in the mitral and in the tricuspid areas a low and blowing systolic murmur takes the place of the first sound, and over the auricular impulse the systolic murmur reaches its greatest intensity. The second sound is either accentuated or reduplicated. Without attempting

an explanation, it is of interest to note, that in this case the auricular signs have in order of sequence followed, not preceded, the mitral and tricuspid in their development.

The tracing, Fig. 3, brings out the influence of respiration. Its



waves are clear, and will be with the other pulsation-curves critically examined later.

The third class may be illustrated by two very instructive cases, in one of which the vessels, in the other the heart itself, must be held to have caused the dilated condition of the auricle.

CASE III.—M. C., married, and 32 years of age, was admitted complaining of pain and palpitation over her heart, and of a slight anasarca of her limbs. After her marriage she had two still-born children, which were prematurely born. From this fact and from symptoms still present, there was no doubt of the existence of specific disease.

Her arteries were atherosed, the pulse hard and regular. On inspecting the thorax the apex-beat was seen in the normal situation, and there was present a well-marked impulse occupying the second intercostal space of the left side. Considerable throbbing was noticed in the carotid arteries, with turgescence and slight oscillation in the veins of the neck. On palpation, the auricular shock was felt to be forcible, and situated an inch and a half from midsternum; the apex-beat was three inches from the mesial line. The right limit of the cardiac note was found on percussion at the right edge of the sternum, and an inch to the left of the sternum, attaining the level of the lower edge of the second rib, whence it extended downwards into the note given by the liver. There was heard over the whole precordia a much-prolonged, loud, and somewhat harsh systolic murmur, which had three foci of maximum intensity—the mitral, the tricuspid, and the auricular areas. That in the latter was the loudest, and its greatest strength was heard to be over the point of impulse, from which it resonated strangely outwards over the lung as though consonating in some undiscoverable little patch of consolidation or small vomica.

This patient had, as the starting point in her malady, atherosclerosis of her vessels. Through this occurred a hindrance to the blood-flow, and consequent reaction upon the heart, the natural result of which was dilatation.

Fig. 4 represents the pulsation taken with the breath held. In it will be observed how the curves become more distinct and ample

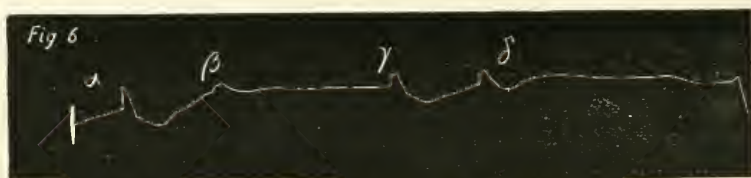


as the tracing has proceeded. The cause of this is the arrest of respiration, which, by engorging the lungs and right side of the heart with venous blood, allows the left side to act more at an advantage, and, by removing part of the pressure in the left auricle, permits the ventricle to send a greater regurgitant wave into it.

Fig. 5 shows this still better. Fig. 6 is another illustration of



the manner in which respiration affects the impulse. From α to β and from γ to δ are expirations during which the shock can be felt, while β and δ mark the commencement of inspiration.



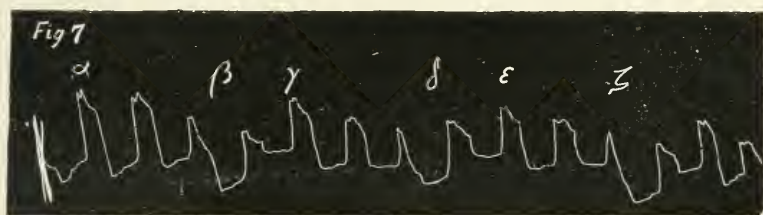
CASE IV.—J. S., an unmarried domestic servant, æt. 18, whose height only reached four feet two and a half inches, and who weighed three stones and a half. For eight years previously, the patient had been weak, and six years before admission had been an inmate of the Royal Hospital for Sick Children on account of chorea. Three years later she was treated in the Royal Infirmary, and again during the previous winter she was for some time in Ward XV. The catamenia have never appeared.

When examined the patient was found to be phthisical, with consolidation of both lungapices. Her pulse was small, sometimes regular, but at other times allorhythmic or arrhythmic. A heaving movement was perceptible over the whole cardiac area. On palpation the apex-beat was found in the fourth left intercostal space three inches

from midsternum, and a powerful ventricular impulse was felt in the third interspace; but between the second and third ribs the most distinct pulsation existed, situated one inch and a half outside the middle line. When percussion was resorted to, the upper limit of the heart could not be defined from the consolidated lung; its right boundary was determined at the right edge of the sternum. In the mitral area there was no distinct first sound, only an ever so faint thump dying away in a loud systolic murmur. A bruit completely replaced the first sound over the tricuspid area, and in the auricular area the systolic murmur attained its greatest distinctness. In the pulmonary area there was accentuation of the second sound.

In the case of this patient there was then hypoplasia. According to Virchow¹ this condition is due to a congenital constriction of the aorta, to which any heart lesions are secondary. Here, from the irregular heart and slight thump, instead of a first sound with the systolic bruit, stenosis of the mitral orifice was diagnosed; and this was confirmed by finding in the journal of Ward XV., that the patient, when there, had as part of her signs an apical thrill, with both auriculo-systolic and systolic murmurs in the mitral area. Now are such hypoplastic examples to be attributed to the cardiac lesion? or are they to be regarded as starting from a congenitally narrow aortic lumen? From very many such cases the former would appear the much more likely and probable theory, as in case after case it has been found in this hospital that the growth has stopped simultaneously with the development of an organic disease of the heart. Besides the inherent improbability of a narrowness of the aorta causing inflammation and constriction of the mitral orifice, it would, indeed, be an interesting coincidence were the growth always to cease exactly at the same time as the heart malady appeared.

Fig. 7 is a tracing from the pulsation of the left auricle. It was



impossible to get the little patient, of course, to hold her breath when she was suffering from dyspnoea, and the above wave-curve brings out the respiratory influence. From α to β , γ to δ , and ϵ to ζ the wave is modified by expiration, during which there is a gradual fall of pressure. β , δ , and ζ , are the commencing points for inspiration, when, as in all the previous tracings, the general pressure rises.

¹ *Ueber die Chlorose und die damit zusammenhängenden Anomalien im Gefäßapparate*, Berlin 1872.

In casting a brief glance over the various graphic representations of the auricular impulse, it will be seen that they have two types. To one belong the first six figures given above. In it the final rise of the tracing is the highest. To the other type belongs only the last illustration, in which the final elevation is not so high as that which has preceded. The cause is not so far to seek. It depends upon the relation between heart-shock and amount of regurgitation. In the first type the force of the regurgitant wave entering the auricle exceeds the previous shock of the systole, while, in the second, the systolic impulse is gradually lost in the gently-falling pressure of that wave.

The exact interpretation of each wavelet is a matter of some difficulty. The final rise is undoubtedly that caused by regurgitation. The small and early swelling in each curve is as certainly due to filling of the auricle from the lungs in diastole. But the rise which causes most uncertainty is that intermediate between these two. It is well seen in Fig. 3, in the latter part of Fig. 5, and forms the first peak of Fig. 7. The doubt which hangs over this wave is whether it be due to auricular or to ventricular systole; the auricle would be expected, *a priori*, to dip down in rear of the ventricle during its systole, thus causing a fall, and it appears to be almost certain that, of the two main curves, the earlier is due to the transmitted ventricular shock, and the final caused by the regurgitant wave of blood.

However this may be, it mainly concerns us here to know, that in no inconsiderable number of cases of heart disease, the wave of regurgitation into the auricle allowed by the incompetency of the mitral valve is of such magnitude as to give both tactile and instrumental manifestations of its presence.

ARTICLE IV.—*Surgical Notes.* By JOSEPH BELL, F.R.C.S. Ed.

Trigeminal Neuralgia.—The treatment of this most obstinate, intractable, and painful malady, will often tax all our resources, surgical as well as medical. Some cases will get better after the removal of one or more carious teeth or stumps; others will improve under large doses of quinine or a course of arsenic; on some mercury in continual small doses will act like a charm; but a residuum will resist each and every method of treatment; and for these victims the resources of surgery must be tried. Hypodermic injections of morphia or atropia will palliate, in some cases may postpone symptoms so long, as to resemble a cure.

What are we to do for the nerve itself?

1. Cutting down upon it as it leaves its foramen, whether supra-orbital, infra-orbital, or mental, if done properly, will invariably relieve for a time, varying from six weeks to six months; but the

pain will again return in nearly every case. This operation I have frequently performed at each of the apertures, most commonly on the second branch at the infra-orbital foramen.

2. On several occasions I have cut down on the aperture and removed with bone-pliers enough of its walls to enable me to destroy at least three-fourths of an inch of the nerve in the antrum. This will almost certainly ensure a longer interval, perhaps a year of relief.

3. In one case I destroyed the nerve by the thermo-cautery; in it the relief was not great, nor prolonged.

4. Seizing the nerve with a strong but narrow pair of dissecting forceps, and taking away as much of it as possible, is a useful method.

5. If, however, the pain is confined not merely to the terminal branches of the nerve, it may be necessary to destroy the nerve farther back; and this, in the second and third branches at least, is possible only by a deeper and more tedious dissection.

In the infra-orbital it may be necessary to go back as far as Meckel's ganglion. This has been done more than once; we know no better account of it than that given by Dr Fowler':—

“On February 27th I performed a modification of Carnochan's operation for exsection of the superior maxillary nerve, assisted by Drs Pilcher, Rockwell, Jewett, Hamilton, and Leary. Ether being administered, the patient was seated with his back to a window. The incision began at the inner angle of the eye, on a level with the infra-orbital ridge, extending downwards about three-quarters of an inch, then curved outwards and upwards, terminating at a corresponding point opposite the outer angle of the eye. This formed a small semi-circular flap, which, when dissected from the bone and turned upwards, laid bare the anterior wall of the antrum of Highmore, and the infra-orbital foramen. The leash of nerves formed by the division of the superior maxillary after leaving the infra-orbital foramen was now dissected from the under surface of the flap, and a trephine five-eighths of an inch in diameter applied to the bone, with its crown slightly overlying the infra-orbital foramen, and its point on a line perpendicular to the same. A few turns of the instrument soon removed the button of bone, and the cavity of the antrum was brought into view. A reflecting mirror fastened upon my forehead lighted up the parts well, and no difficulty was experienced in cautiously breaking down the floor of the orbit with a small three-cornered chisel provided for that purpose.

“Following the nerve along the infra-orbital canal, occasionally stopping to suppress the hæmorrhage from the infra-orbital artery, I finally reached the posterior wall of the antrum, which I perforated with a one-half inch trephine, thus exposing Meckel's ganglion. Here the hæmorrhage from that portion of the internal

¹ *Proceedings of the Medical Society of the County of Kings*, Aug. 1877. Pp. 77.

maxillary artery which is contained in the sphe-no-maxillary fossa gave rise to some delay, but by patiently waiting and applying small pieces of sponge tied to whalebone the bleeding was controlled, and the operation completed by breaking down and removing Meckel's ganglion and dividing the orbital, sphe-nopalatine and posterior dental branches, and by means of a pair of small curved scissors dividing the nerve at its point of exit from the cranium through the foramen rotundum.

"The hæmorrhage having ceased, the parts were well cleansed and the flap brought down to its position and secured by seven silver wire sutures. The operation occupied about an hour.

"The patient rallied well, union by first intention occurring except at the point where a ligature which had been applied to the infra-orbital artery passed out from under the flap. The sutures were removed on the sixth day, and the ligature came away on the seventh.

"The operation, so far as the relief of the neuralgia depending upon the superior maxillary nerve, was a complete success."

In the inferior dental cases, the nerve can be cut at the mental foramen; or at the point of entrance into the bone, where it can be reached in the groove behind and inside of wisdom tooth; or a more formidable operation may be done by a removal of enough of the alveolar wall to allow a piece of nerve to be cut out. This last operation will seldom be required.

Nerve-stretching in Sciatica.—A. B., a handsome, muscular, well-nourished man aged thirty, was sent to me with the following note from Dr Nasmyth, the able house-surgeon of the Perth Infirmary:—

"Dear Sir,—The bearer has been treated for three months in the above for sciatica. He has been treated by the following remedies—acupuncture, actual cautery, blisters, Corrigan's cautery, galvanism, hypodermic injections of morphia, hypodermic injections of chloroform, iodide of potassium, turpentine, and castor-oil, tincture of gelseminum, quinine, iron and cod-liver oil, cupping, and leeching, etc. The result has been entirely unsuccessful. I send him to you, to have the advantage of further treatment. I suppose nerve-stretching is the latest.—Yours respectfully,

"T. GOODALL NASMYTH."

Not having much hope in ordinary remedies after the above, and encouraged by the success of Professor Nussbaum's cases, I put him under chloroform, and making an incision about five inches in length, so as to enable me freely to expose the deep fascia of the thigh, divided it, and then separated the muscles sufficiently to expose the great sciatic nerve soon after its appearance in the thigh. Owing to the muscularity of the patient, the nerve was deep, but was easily found. Its sheath seemed to be somewhat thickened and vascular, possibly from the very extensive

and deep cauterization that had been used. Slitting up the sheath, I lifted the nerve fairly out, and tried to raise the limb from the table by it. It came up into a loop, with a curious elasticity and a feeling as if a little more would pull it all up by the roots.

Keeping in a large drainage-tube quite down to the nerve-sheath, I stitched up the wound, which had been dressed with antiseptic precautions, and gave no more trouble. I had the patient under observation for three months, during which time he had not a twinge of his old pain, and he was ordered to return if he ever felt anything. He has not done so.

ARTICLE V.—*Case of Lacerated Wound of the Axilla (under the care of Mr Joseph Bell).* By ROBERT KIRK, M.B.

THAT bloodvessels have a most fortunate tendency to escape injury, even when the wound which threatens their rupture is directly in their course, is a fact which has been noticed by surgeons for ages, and in support of which cases are cropping up with considerable frequency. The following case is one in point, and being the result of a rather curious accident, the facts, as noted in the ward journal, will be given in full:—

T. F., æt. 12, was admitted to ward R.A. on 3d March 1877 in a state of coma, suffering from a lacerated wound of the axilla, and a punctured wound of the left eyebrow.

The history of the case was as follows: The patient, along with some companions, had been trying to outdo one another in feats of strength and daring on the various trapezes and bars in the Royal Gymnasium. The Giant's Swing, a huge see-saw, either end of which rises alternately to the height of forty feet, seemed to have raised in the little fellow's mind the idea that in it he had the means of laying claim to be the most daring of the group. Accordingly, he got inside the wooden paling which encircles the springs on which the end cushions, so as to lessen the jolt which would otherwise occur on the swing hitting the ground, and, catching firm hold of the end of the swing, signalled to his companions to raise him into the air. This was done, and he had been raised to the very top, when, either from the jolt, or from his losing his presence of mind, he let go, and, falling on the paling below, was impaled by one of the spikes, which broke off close to his body. He then fell to the ground, the second fall no doubt being that by which his head was injured. A policeman, seeing the accident, rushed forward and tried to withdraw the spike, fortunately without success.

On admission, the patient was comatose, the pulse slow and feeble; the eyes were almost insensible to light. The wound on his eyebrow was first examined, and was found to pass down to the

bone. The oozing from it was easily stopped by pressure. A piece of wood was seen penetrating the vest under the left axilla, and a hard mass was felt in the neck. The whole of the clothes were therefore cut away carefully, and the position of the stick was determined. Entering the skin at the level of the fourth rib, it could be traced upward into the axilla, and again between the clavicle and scapula up into the neck, where the point was felt behind the sternomastoid midway between the shoulder and ear. The radial pulse was rather weaker on the left side than on the right, but not more so than could easily be accounted for by the pressure. A couple of jagged edges protruded from the wound, and these being laid hold of, Mr Kirk, with very considerable difficulty, succeeded in withdrawing the piece of wood, which measured eight inches long, two and a half inches broad, and three-quarters of an inch thick. It tapered for about two and a half inches, and on the point the portions of clothes which were carried into the wound remained. These consisted of a portion of a jersey, flannel shirt, and the inner and outer lining of the vest. On the withdrawal of the piece of wood a large clot of blood escaped, but no hæmorrhage occurring the wound was thoroughly washed out by means of a gum-elastic catheter attached to a powerful syringe with a solution of 1-20 carbolic acid. Two drainage-tubes, each six inches long, were introduced into the wound, no attempt being made to bring the edges together, as the amount of bruising was so great that sloughing of the skin seemed to be almost certain. The axilla was then padded with loose gauze, and the whole was enveloped in a large antiseptic dressing. Next morning patient had regained consciousness, the vomiting had ceased, and he had little or no pain. His pulse was 90, and his temperature 99.2° . When the dressings were changed, a considerable quantity of serum was found to have exuded into them, but there had been no bleeding, and there was no trace of inflammatory redness. The right arm was almost completely paralyzed; the movements of both legs, however, were normal.

Day after day the wound contracted in size, necessitating the removal of portions of the drainage tubes, and as they decreased in size, the quantity of discharge also proportionately decreased. The carbolic dressing was discontinued on the twenty-second day, boracic dressings being substituted, on account of the former having caused some irritation of the skin from being applied in a very strong solution.

On 1st April he left the hospital, and returned occasionally to get dressed, and on 16th April the wound had quite healed, without having ever excreted a single drop of pus, or having caused any pain whatever.

ARTICLE VI.—*Case of Pyæmia.* By JOHN BALFOUR, L.R.C.S. Ed.
Inspector-General of Hospitals (retired).

THE following facts are all I am able to give in regard to the history of the case:—

On the 18th May 1877, Henry Lawson, æt. 20, fisherman, Pittenweem, was throwing up from his boat (then in the harbour) to the pier, baskets filled with great lines. One of them started back from the pier; his left hand and arm were forced back, but he caught the basket and threw it up on the pier, after which he complained of pain at the shoulder-joint. In the evening of next day, the 19th, he stood in the boat and took down pieces of coal which were handed him from the pier, but during this time he complained of not being able to raise his left arm above the horizontal line—or rather not so high. On Sunday, the 20th, he went to a bonesetter—on Tuesday, the 22d, another bonesetter was brought to him—they manipulated, but it is not exactly known what was done. He continued to complain of his left shoulder, and suffered great pain. Dr M'Arthur saw him on the 28th. At this time there was a swelling the size of the fist over the left shoulder, and he and his assistant thought there was a fracture at the top of the shoulder, but from the state of the parts Dr M'Arthur did not think it right to make a minute examination for this, there being great swelling, tension, and suppuration. The abscess was opened and nearly a saucerful of creamy pus was evacuated. The man died on the 4th of June, and was buried on the 6th.

Death under these circumstances having been reported to the authorities, the Procurator-Fiscal decided on having a *post-mortem* made, and entrusted this to Dr M'Donald, of Cupar, and myself.

The following is a copy of the report made:—

PITTENWEEM, 8th June 1877.

We hereby certify on soul and conscience, that we this day, Friday, 8th June 1877, examined the body of Henry Lawson in the Session-house of the Established Church, Pittenweem, and that the following is our report of the case and our opinion thereon:—

“The body was removed from the coffin; it was wrapped in the ordinary grave-clothes, and was identified by the father, Henry Lawson.

“*External Appearances.*—The body was that of a young man fairly nourished; there was very slight cadaveric rigidity in the lower limbs;¹ in the trunk and upper extremities putrefaction had advanced to a great extent; on the chest, abdomen, and upper extremities, the cuticle was peeling off, and the cutis vera had a general green tint; the face was greatly swollen and almost black. The only external injury was an oblong ulcer-

¹ These were in good preservation, putrefaction not having commenced in them.

ated sore on the top of the left shoulder, one inch in length, by three-quarters in breadth; on probing this with the finger a fracture was found which, on carefully laying the part open, proved to be one of the acromion process; the whole spine of the scapula was denuded of periosteum, and the muscles above and below it were filled with diffuse suppuration. On examination of the shoulder-joint, the ligaments were found in a state of health, and axillary artery, nerves, and veins were in a normal state.

"Internal Appearances.—Head. On cutting through the scalp much dark fluid blood was effused; the membranes of the brain were healthy; the upper convolutions of the middle lobe of the brain on the right side were congested. No fluid was found in the lateral ventricles, and the brain was otherwise healthy; the cerebellum was congested.

"Chest.—On opening the chest a quantity of bloody serum escaped from the left pleural cavity. Finding that on the left side the muscles were not in a normal state, the whole were laid bare, and were found to be greatly congested and loaded with infiltrated purulent matter; the muscles of the right side were also examined, but were found to be healthy. Returning to the cavity of the chest, the left pleural cavity contained two-thirds of a quart of bloody serum (in addition to what escaped); opposite the third and fourth ribs external to the pleura there was a dark patch of effused blood, and around this were slight adhesions between the pleura pulmonalis and costalis. The lung itself was slightly compressed, and congested both in front and behind. On section were found many patches of dark fluid blood, and posteriorly one or two irregular, ill-defined, purulent spots. The right pleura contained one-third of a quart of bloody serum, mixed with much thick pleural effusion. The lung on section was generally congested, with a few ill-defined purulent spots scattered here and there.

"Heart.—The heart contained no blood. The cavities, valves, and walls were healthy.

"Abdomen.—The spleen was congested. The liver, kidneys, and intestines generally healthy.

"The following are our conclusions:—

"1st, That the original injury was fracture of the acromion process of the scapula.

"2d, That inflammation of the spine of the scapula set in, followed by suppuration of the muscles there, and also of the left side.

"3d, That this terminated in pyæmia (blood-poisoning with matter), the appearances in the chest corresponding therewith, and that this pyæmia was the cause of death."

JOHN BALFOUR, L.R.C.S. Ed.

Inspector-General of Hospitals (retired).

K. N. MACDONALD, M.D. Erlangen,
L.R.C.S. Ed., etc.

ARTICLE VII.—*Sequelæ of the so-called "Paludal Fever of Mauritius."*
By J. LABONTÉ, M.D.

SUBSEQUENT events have fully confirmed the opinions we professed, so far back as 1866, on the nature of the fever which was then epidemic in Mauritius. That, now-a-days, that fever be called paludal fever, is not strange, as its symptoms are very nearly those that belong to that disorder, but to conclude, that at the outset the type was what we now observe, would simply be a mistake.

The principal and most common sequelæ are the following:—

1. *On the Eyes.*—As a matter of fact, 25 per cent., if not a larger proportion of patients, who have suffered severely from the fever, complain of amaurosis. Some, and we are of that opinion, believe that the amaurosis in those cases is only the result of fever, whilst others believe it to be the result of large doses of the sulphate of quinine. Now, this opinion does not hold good in the very many instances to be met with, where amaurosis supervenes without the patient having ever taken an atom of quinine. Nor is it rare to find no amaurosis at all, when patients have been in the habit of taking large doses of that drug. Therapeutics, on the other hand, has never failed to show that all such cases get well, and rapidly too, under the influence of a tonic treatment, of which the basis is strychnine, steel, bark, cod-liver oil, and cold douches.

2. *At the Mouth.*—Aphthæ are by far the most frequent sequelæ, as also scorbutus, with profuse bleeding at the gums and fœtor, running rapidly into gangrene, causing great pain and swelling of the submaxillary glands. Childhood seems most particularly liable to that complication, which is best treated by vegetable acids, astringent and tonic gargles, the perchloride of iron, carbolic acid in cases of gangrene, and by generous diet. A strong acidulated decoction of the *Siegesbeckia orientalis* answers well in almost every case, and on the decline small doses of the iodide of potassium are of real service. All direct irritating causes and influences are, of course, to be carefully avoided during treatment.

3. *At the Stomach.*—We find dyspepsia, gastralgia, flatulence, and atony most common, each of which disorder has its own peculiar treatment. But of all the organs in the abdomen, that in which the most striking modifications are to be found, is the spleen. That viscus very often extends vertically from the lower ribs down to the pelvis, and transversely beyond the linea alba; sometimes the inversion is complete, constituting what is really called a floating spleen. The sensations felt in all such cases have very often led to serious mistakes with the advanced stages of pregnancy. Abscess of the spleen, and rupture from external violence, causing sudden death, must be noted too. Patients with enlarged spleens have a cachexia of their own, they are generally anæmic and incapable of the slightest exertion or activity without feeling great dyspnoea. In

all such cases, treatment is by long-continued small doses of the sulphate of quinine, and by repeated blisters over the affected organ, steel and bark in combination, and generous diet. The external use of the tincture of iodine over the enlarged viscus, combined with the internal administration of three or four grains of the iodide of potassium and as many drops of the tincture of iodine daily, is a plan of treatment which has also given good results in many instances.

Congestion of the liver with icterus is common, for the treatment of which nothing has best served us than blue pill associated with podophyllin, and the extract of guaiacum; alkaline waters do well as an auxiliary, so does a blister over the organ in chronic cases. Abscess of the liver is just as frequent as abscess of the spleen, both of which require surgical treatment. In only one case out of four, where we punctured for abscess of the liver, did the patient recover after injection with the tincture of iodine; in the other three cases that plan was not tried. Recoveries from abscess of the spleen are by far more common.

Ascites following upon hepatic disease is of frequent occurrence as a sequela, and is best treated by drastic purgatives and by diuretics, of which *Spilanthes mauritiana* is a very active one, given in strong decoction. The iodide of potassium, colchicum, and digitalis in combination, are, at the same time, useful and necessary. Yet it often happens, that in spite of medical treatment, the operation of paracentesis abdominis becomes urgent, and has to be repeated several times in one and the same case.

Dysentery, which often resists all ordinary and known treatment, frequently gets well under the influence of the most simple agents, and in almost hopeless cases, by large doses of the sulphate of quinine. Without attempting to demonstrate the *modus operandi* of that drug in such cases, when dysentery is a sequela of the fever, its indication and utility are nevertheless very evident, when there supervenes sudden and manifest aggravation in the dysenteric symptoms shortly after an attack of the fever, whether of the remittent or intermittent type.

4. The sequelæ are most remarkable on the genito-urinary organs of the female, and are either menorrhagia or amenorrhœa with equal frequency, on the gravid uterus abortion most frequently. Is menorrhagia in fever caused by the sulphate of quinine, and is abortion under those circumstances caused by the same drug? Drs Plumb and Lincoln assert that the sulphate of quinine acts directly on the gravid uterus when there is dilatation of the os uteri, by exciting strong and regular contractions in that organ, thereby hastening delivery ("Quinia as a Parturient," *American Journal of Medical Science*, July 1873). In the *Annals of Gynecology* for October 1874, the action of the sulphate of quinine on the uterus is the subject of research by Dr Dubonè, who says, that in three cases where the sulphate of quinine was given, it acted

on the inertia of the uterus favourably during labour. Mr Burdel demonstrates by a series of well-observed facts, that the sulphate of quinine has not the property of causing abortion, as some practitioners imagine; but that, on the contrary, it has a special nerve-sthenic action on the uterus and its circulation. So far as our experience goes, resting on clinical observation, we hold that the sulphate of quinine has no part in the foregoing sequelæ, which we consider to be simply and solely the effects of the fever itself. Nay, in that form of the fever when the "shakes" come on repeatedly, those effects on the gravid uterus are almost absolute, amounting to labour or abortion as the case may be. When, however, the sulphate of quinine is taken in time, and in proper doses, symptoms of labour do not show themselves, and gestation is carried to its full period. We believe in the direct action of the fever on the cerebro-spinal system, and its reflex action on the uterus in all those cases, which action is counterbalanced by the tonic and febrifuge properties of the sulphate of quinine, as shown by Mr Burdel. Another fact which shows that the sulphate of quinine goes for nothing in the cases referred to, is that in the Mauritius we meet with but very few instances of pregnancy where the sulphate of quinine has not been taken during all the time of gestation, either daily or at regular intervals, to within a day or two of confinement, either as a febrifuge or as a tonic, without determining the slightest accident. Again, menorrhagia is as frequently met with, if not oftener, in those instances where the sulphate of quinine is never taken, on the supposition of its injurious effects. We doubt very much that in practice here, the sulphate of quinine can ever be preferred to the ergot of rye as a parturient, simply because all our patients are so well used to quinine, in all shapes and doses, either in view of abating or preventing fever, that it might possibly happen that its effects as a parturient will be null.

As regards the action of the fever on the genito-urinary organs of the male, besides renal hæmorrhage, we need only mention another form of the disease not at all uncommon, known as chylous urine, to be met with in adults as well as in children—a disease to be properly classed amongst diseases of the nervous system, and which generally gets well under the influence of a tonic treatment.

5. Anæmia, generally accompanied by œdema and syncope, is the sequela of the fever on the blood system. Such a condition is amenable to treatment, but at the same time of great gravity, a fatal issue happening at a time when least expected; the proportion of deaths recorded has been considerable. General tonics are the chief and most essential treatment.

6. On the cerebro-spinal system the fever acts in different ways, producing in that form called "pernicious" either complete tetanus, which may last a few hours or a few days, until death supervenes, or a state of deep coma, with insensibility and profuse cold clammy sweats,

terminating by death after a few hours' duration; both which forms are invariably fatal. Sometimes its action on the brain causes suicidal delirium, of which a few cases have been known; in the puerperal state, it has produced temporary mania, from both of which states patients do generally recover. Paraplegia, hemiplegia, atony of the whole system, have very frequently been noted as the ordinary sequelæ of the fever, both in adults and children. The nitrate of silver, the sulphate of strychnine, sulphurous baths, counter irritation, electricity, are the remedial means which, in our hands, have had the greatest success.

Lastly, urticaria, preceding or most generally accompanying an attack of the fever, is of common occurrence. The eruption in those cases is accompanied with redness, swelling, and intense itching. Herpes, pityriasis, and ulcers of the weak and indolent character, are exceedingly frequent.

Whether the disease we have had under consideration affected the lower animals in this colony or not, is an open question; but judging from the excessive mortality in draught animals, more especially mules and oxen, that has prevailed of late years, and which continues up to this moment, there is reason to believe that such a thing is most probable. Without going over all the symptoms as they gradually show themselves, we cannot but notice what is constant and characteristic of the disease, indicative, at the same time, of its action on the cerebro-spinal centres: viz., drooping of the head and palsy of the hind legs, besides which there are many other important symptoms, such as, cedema, anæmia, etc., etc., showing that there is a close analogy with what is observed in the human subject. Further, we know that under the influence of an active treatment based on the sulphate of quinine, neurine tonics, and counter-irritation, it often happens that sick animals do recover eventually; whereas, when allowed to run its rapid course, the disease invariably terminates in death. Another consideration in support of the view we take is, that one district of the island has not been a protection against the disease any more than another district, just as in the case with human beings, and that the mortality has corresponded, as a rule, with the hygienic conditions of those draught animals, being especially high where they were underfed, badly accommodated, and overcrowded. It is worth noting, that in those same sugar plantations where the mortality has been excessive, especially after crop time, there has been none, or very little if any, amongst animals employed otherwise than in the fields—a circumstance which demonstrates that, whatever the disease, it is most manifestly aggravated by external influences such as we have mentioned. We are not prepared to say whether or not the disease is contagious; but we are much inclined to believe, that when it raged as an epidemic, it may then have been of that nature—many instances being on record when, on the arrival of a sick animal in stables where the disease had never

shown itself, it rapidly spread to all the rest, destroying in many cases from first to last. Our observation of the sick in both cases inevitably leads us to the conclusion, that the disease is one and the same, carrying away hundreds and thousands in both cases at the time it was epidemic, and as yet continuing its work slowly, it is true, but steadily, and that in both instances it was very much aggravated by endemic and hygienic conditions.

ARTICLE VIII.—*Typical Tubercular Leprosy.* By WILLIAM JELLY, M.D., F.R.C.P. Lond., Madrid.

DOÑA DOLORES LOPEZ, single, æt. 35, of the town of Torrijos, province of Toledo, came here to consult me on the 6th April 1875; she has the Morisco-Jewish type of physique and colour, with pleasant but melancholy or triste appearance, yet graceful and even cheerful manners, a set of perfect and beautiful teeth, a profusion of jet black hair, the whole frame well proportioned and well nourished, family history good on both sides, neither syphilis, phthisis, scrofula, gout, etc., in the family, brother and sister tall, stout, and ruddy. She applied to me more on account of the hideousness of the disease than for acute suffering.

Objective Symptoms.—The face and upper limbs, extending from shoulder-blades to wrists, as also the lower limbs, extending from the lumbar vertebræ, sweeping round the nates, down to ankles, were covered with irregular tubercular masses from the size of a millet seed to that of a walnut, some of those on the face being much larger, and one on the left cheek as large as half a turkey's egg; covering the whole of the right elbow-joint existed a superficial bleeding anæsthetic ulcer, and running along the course of the ulnar nerve, from elbow upwards, were three intensely painful globular tumours the size of marbles; also running along the inner borders of the fibula there were three tumours of the same size, equally painful as in the arm,—as yet no other wound or lesion but the ulcer above mentioned,—the scalp, chest, abdomen, and back being free of spot or tubercle.

Subjective Symptoms.—Frequent headaches, poor appetite, with occasional nausea, tongue large, soft, and milky, persistent constipation, with foetid breath, catamenia most regular, but pale and scanty, pulse feeble and slow (68), temperature 97° F., feet intensely cold, and now and then a general chill.

Treatment.—Empirically, I tried the effect of touching a few of the tubercles on the face with acid nitrate of mercury, and drying it off with blotting paper; to my delight, in three days I found each spot I had touched had all the appearance of a vaccine vesicle on the eighth day, viz., the well-defined and well-known shape of vesicle, with its inflamed areola, filled with a fluid like lymph

and pus, and its pit at the summit, on which a scab formed, and in three more days fell off, leaving a cicatrix identical with that left by a good vaccine vesicle. Observing, as I thought, such excellent results, I began to treat the whole of the surface of the body affected, dividing it into sections, beginning at the face, and applying without intermission twice a week the above powerful remedy; in three months the face was all levelled down, leaving a white pitted cicatrix, and in three months more the other parts were all levelled down; at same time I administered iodide of potass with bromide, afterwards quinine and iron, then strychnia and iron; she improved wonderfully in her general health. In the month of October I sent her to the alkaline baths of Alhama, in Aragon, for a month, where I visited her, and she was still improving. She left the baths for her home in Toledo, then came up to see me in February 1876, and, to my great disappointment, I found small tubercles beginning to make their appearance round the borders of the old cicatrices. Her health had completely broken down, her lower limbs were very cedematous, and deep small ulcers had formed in the calves of the legs, discharging a thin fetid matter, while she could not sew from want of sensation in tips of the fingers, not being able to hold or thread the needle; her sight also was affected, so that she could not read; the catamenia became irregular; headaches, with occasional vomiting, returned. As she could not remain here for treatment, I gave her a plan to adopt at home. She again improved, the ulcers in the legs healed, the cedema left her, and in June following she came to me again, the disease still progressing, her legs much distended, and two deep ulcers on the backs of the calves extending down to the tibia, with small openings just large enough to admit a probe; one was anæsthetic, the other intensely painful; she was losing flesh rapidly, great loathing of food, with vomiting. I again gave her a plan to follow, and she wrote me in October that she had much improved in every way, but that the tubercles were increasing in size. A few days ago I ran down to Toledo and paid her a visit, and found her in a most sad state to look at; her whole body had atrophied—in fact, she was mere skin and bone; there were no ulcers, no cedema, headaches gone, she could not walk about, the tubercles on the face were still increasing (she refused to be treated again with the acid nitrate of mercury), her features were all twisted—in fact, truly leonine. I felt much chagrined; I could neither give her comfort nor relief now. This is the only case of leprosy I have seen in my seven years' residence in Spain; I have seen two cases of *bucnemia tropica* in soldiers, acquired in Havannah.

ARTICLE IX.—*Mammary Abscess treated Antiseptically.* By
JAMES CARMICHAEL, M.D., F.R.C.P.E.

(Read before the Edinburgh Obstetrical Society, 11th February 1874.)

It will generally be conceded, I think, that the after-treatment of milk abscess, as hitherto practised, is in many respects unsatisfactory.

The method adopted has been generally that used in abscesses in other parts of the body—poultices, water-dressing, lotions, and ointments of various kinds. The inconvenience, nay, the disadvantage of these applications is perhaps more apparent here than elsewhere. The delicate skin of the breast and nipple does not bear well soaking, or the application of almost any of the ordinary dressings, and often shows its dislike, so to speak, to such applications by breaking out into eczematous, pustular, or other kinds of eruptions, which trouble and annoy the patient, perhaps long after the wound has healed. In some cases I have often felt convinced that wet-dressing tends to encourage suppuration in the sac, and, by leading to a long continuance of discharge, prevents the speedy healing of the wound, and favours the production of sinuses.

In no class of cases, perhaps, more than in these is it desirable to avoid any such unfavourable results. Our patients, besides being in the puerperal state, are as a rule of delicate constitution. It therefore becomes more than ever necessary to procure a speedy healing of the wound after evacuation of the abscess, so as to husband the woman's strength and prevent a recurrence of a second abscess in the same or perhaps in the opposite breast; these abscesses, partly on anatomical grounds, but also for other reasons, being specially prone to recur. Most of you of larger experience than myself must have often seen women brought very low by abscess after abscess recurring in one or both breasts. I can recall a case where a woman had four separate gatherings in one breast, and two in the opposite side, within a few weeks.

Any method of after-treatment which will tend to lessen or avert the ill effects referred to must therefore be of great service in these cases.

As we obstetricians have in former times followed the practice of surgeons in their treatment of abscesses, so may we now, at least I think, give their antiseptic method a trial. I am well aware that it has been frequently resorted to already, but in the belief that it is worthy of more general adoption, I have ventured to introduce it to your notice to-night. Having met with a case where the new method of treatment contrasted most favourably with the old, I shall, with your permission, Mr President, read the notes of it to the Society.

Mrs B., multipara, of somewhat delicate constitution, fell in labour on the 15th November. I saw her about six hours after. On examination, the breech presented at the outlet. During the interval between the pains, the feet were brought down, and delivery was easily effected. All went on well till the third day, when the breasts became gorged and she had an attack of ephemeral fever, which passed off in a few hours in the usual way. The child took the breast lazily, and both nipples became sore. Glycerine of tannin was applied, and the child allowed to take the breast only through a shielded teat. The patient continued to recover slowly, and was able to be up on the eleventh day. The nipples, however, were still troublesome, but otherwise she appeared well. On the fifteenth day the right breast was painful, and a hardness could be felt in the submammary tissue fixing the breast to the pectoralis muscle. The swelling continued to increase, and the inflammation rapidly spread throughout the mamma. On the seventeenth day fluctuation became quite distinct, and I accordingly made an incision two inches in length, at the most depending part of the abscess, in a line radiating from the nipple to the circumference of the breast. About 12 ounces of thick creamy pus were evacuated, poultices applied for 24 hours, and subsequently water-dressing. A considerable quantity of matter continued to be discharged for some time, and three weeks elapsed before the wound healed.

Four days after the abscess in this the right breast was opened, the patient began to complain of the left breast, and on examination it was found to be tumid and swollen, but painless. Belladonna ointment was applied with gentle friction. Diluted tincture of iodine was likewise used, but without effect. At the end of ten days the breast had become enlarged and prominent, and fluctuation was distinct over its entire extent, giving the impression that the whole mamma was converted into one large abscess.

The patient was now very weak, and the excessive discharge from the other breast, no doubt, assisting in the production of this condition, it became a matter of some moment to save her, if possible, a repetition of the same debilitating process a second time. I therefore determined to operate on this occasion antiseptically.

Having placed a rag soaked with carbolic-oil over the breast, I raised its edge and made an incision about an inch long, quickly replacing the rag. With both hands applied I gently squeezed out the entire contents of the abscess, amounting to about a breakfast-cupful of matter. A drainage-tube was now inserted into the cavity, and through this a weak carbolic solution injected, so as to wash out completely the interior of the breast. The wound was now dressed by applying first a piece of lint soaked in carbolic-oil, then several layers of dry lint of a larger size on the top, and over all a thick layer of chloralum wool. The following day the

dressings were removed. They were thoroughly soaked with serous oozing, but no more pus had been discharged. The drainage-tube was removed and the wound dressed as before. On the fifth day the dressings were again removed and the wound was healed.

The wound in the opposite breast was still open and discharging, and was not closed for fully a week after this breast had been firmly healed.

The comparative result of treatment in the two abscesses I think speaks for itself. I am well aware of the folly of attaching much importance to a single case as evidence in any argument; but, as in other parts of the body, the antiseptic treatment of abscesses has proved so successful, I think it is not unreasonable to expect similar good results in mammary abscess. At all events, as I think, the method deserves a trial.

Part Second.

REVIEWS.

Clinical Lectures on the Curability of Attacks of Tubercular Peritonitis and Acute Phthisis (Galloping Consumption). By Dr M'CALL ANDERSON, Professor of Clinical Medicine in the University of Glasgow. Glasgow: James Maclehose: 1877. Pp. 56.

WE rejoice that Dr M'Call Anderson has at last attained the conviction that pneumonic phthisis is curable, and that even so-called tubercular peritonitis may be arrested. Considering the very slender amount of evidence necessary to convince him of these important facts, the wonder is that he has not arrived at his present conclusion long ago. If Dr Anderson's acquaintance with other subjects comprised in clinical medicine be on a par with his knowledge of tuberculosis, as shown in this pamphlet, we may expect the night of our ignorance to be frequently illuminated by similar coruscations of genius, which we trust may be more profitable to himself than they are likely to be to his fellow-practitioners.

On Stethometry. By ARTHUR RANSOME, M.D., M.A. Cantab.
London: Macmillan & Co.: 1876. Pp. 207.

DR RANSOME'S book contains work of the very best and most important kind, and cannot fail to be highly appreciated by the profession. Every attempt to investigate the physics of the body, if carefully conducted, must be attended with some increase of our

knowledge, and will be most highly thought of by those who best know the difficulty involved in carrying it out.

We fail, however, to see any advantage which the chest-rule can have over a measuring tape; and, though Ransome's three-plane stethograph may possibly be more useful for physiological purposes, Riegel's double stethograph is infinitely superior in relation to diagnosis, as it gives simultaneous tracings of any two points on opposite sides of the chest, recording graphically the rate of respiration, the extent of movement, and the relation of inspiration to expiration at each point. We can conceive of nothing more capable of settling disputes in physical diagnosis, and regard it as a most useful helpmeet to a clinical teacher. Hænisch has also invented a double stethograph simpler and cheaper than Riegel's, but not so perfect, or apparently so trustworthy. Riegel's stethograph may also be employed as a cardiograph.

We need not insist on the advantage of having simultaneous tracings of the two sides of the chest, as it is obvious that we are thus enabled to avoid those sources of error due to unconscious alteration in the rate or degree of fulness of the respiration when these are measured on the two sides at separate times. Ransome's work is the only one devoted to stethometry in the English language, and contains a great deal of extremely interesting information, and we have much pleasure in recommending it to the profession.

The Geographical Distribution of Heart Disease and Dropsy, Cancer in Females, and Phthisis in Females in England and Wales. By ARTHUR HAVILAND, M.R.C.S.E., etc. London: Smith, Elder & Co.: 1875. Folio pp. 116.

THIS magnificent work is the product of many years of unremitting labour; its beautiful maps convey information graphically at a glance, which it would take a very long time indeed to ferret out, even with the means of obtaining it at hand, and that information is of a most valuable and important kind. This work cannot fail to prove specially useful to insurance physicians; but, indeed, to all it conveys ideas of the causation and spread of those diseases of which it treats, which to some extent are quite novel, and which must have an influence upon their practice, especially in the selection of health-resorts, and this not only in regard to special health-resorts, but even as to those only intended for an ordinary autumn sojourn.

A System of Medicine. Edited by J. RUSSELL REYNOLDS, M.D., F.R.S. Vol. IV. London: Macmillan and Co.: 1877. Pp. 814.

THIS volume, for which we have had to wait six years, is, as might have been expected, of very great, but chiefly antiquarian interest. The remarkable paper of Sibson on Pericarditis looks like an antique alchemical manuscript, from the number and quaintness of its interspersed hieroglyphs, and to a practical physician it is of about equal value. The disease is so completely lost amid the complexity of symptoms, upon which an unnecessary and bewilderingly minute attention is bestowed, that it is quite hopeless to endeavour to obtain a clear and distinct idea of it from this paper. From the number of coffins interspersed—significant of a fatal termination—Sibson's cases seem to have been more than usually fatal. It is somewhat absurd, when we turn to the section upon the treatment of this disease, to be referred to a separate pamphlet which will be supplied "*if desired.*" Of course we all desire this pamphlet if it contains any information, but if it does, why was that information excluded from this important work? and if it does not, what is the use of saying anything about it. Rest, chloroform, and belladonna liniment, leeching, and paracentesis, is the routine of treatment actually recommended, and a very poor pennyworth of bread indeed it is to all the preceding sack. Dr Gairdner's paper, which is also one that was waited for, is very full and learned, but might have been written, we think, in somewhat less than six years. It is charmingly egotistic as usual, and leaves one with about as vague an idea of what angina pectoris really is as could well be imagined. While the treatment propounded is merely a resumé of all the drugs which have been already employed, without any leading idea to guide us as to the most appropriate line to be followed. On the whole, we are inclined to regard Gowers's paper on dilatation of the heart as really the one of most practical importance in this work. Though we demur entirely to the statement as to the utility of bloodletting and purgation in the treatment of such a condition, temporary relief may no doubt follow the employment of such measures, but the ultimate result will assuredly be an increase of the primary disorder. Dilatation is the most important accident which can befall the heart. Gowers, we think, has succeeded in describing its mechanism very clearly and distinctly, and we consider his paper of very great practical importance, and well worthy of being carefully studied.

It is amusing to find Dr Warburton Begbie described—among the contributors—as Professor of the Institutes of Medicine. Shade of Hughes Bennett, forgive the blunder. It does Begbie no honour to call him a professor—a title which every dancing-master assumes; it does him a positive injustice to call him Professor of the Institutes of Medicine.

A Treatise on the Theory and Practice of Medicine. By JOHN SYER BRISTOWE, M.D. Lond., F.R.C.P. London: Smith, Elder, & Co.: 1876. Pp. 1166.

A Handbook of the Theory and Practice of Medicine. By FREDERICK T. ROBERTS, M.D., B.Sc., M.R.C.P. London: H. K. Lewis: 1877. 2 Vols., pp. 445 and 444.

IT is nearly four years since we expressed a very favourable opinion of Dr Roberts's work on its first appearance. The fact that it has so soon attained a third edition, confirms the view which we then took, and renders it unnecessary for us to do more on the present occasion than to remark, that its division into two volumes makes it a much more handy book than it was, while the interior of the book has gained considerably in appearance by being printed in one uniform type. Dr Roberts's excellent manual has now, however, a formidable rival in Dr Bristowe's "Treatise;" there is, however, room enough for both, and neither, we daresay, will quarrel with us for wishing the other well. Dr Bristowe has been long before the profession as an able thinker and writer on professional subjects, and one of his earliest papers on the mitral incompetence resulting from dilatation of the heart was distinguished for its excellent reasoning and careful observation. His present work is second to none of its kind, the part on the diseases of the nervous system being perhaps that deserving of most praise. Though somewhat unhandy from its bulk, it is eminently readable both in matter and in print, and fully deserves the success it is sure to attain.

Ziemssen's Cyclopædia of the Practice of Medicine. Vol. VI. *Diseases of the Circulatory System.* Vol. VII. *Diseases of the Chylopoetic System.* Vol. XI. *Diseases of the Peripheral Cerebro-Spinal Nerves.* Vol. XII. *Diseases of the Brain and its Membranes.* London: Sampson, Low, Marston, Searle, and Rivington: 1876-77.

UNLIKE our own cyclopædias, which are so long in coming out that the earlier volumes are obsolete before the later ones are published, Ziemssen's *Cyclopædia* does not hang fire. It is little more than two years since it was first commenced, and already ten large volumes have been issued, so that the whole work of fifteen volumes will be easily comprised within the four years as was promised. The later volumes display no falling off in any respect, but if anything they are even more interesting and important than the earlier ones. The various articles on cardiac disease will compare favourably with those on similar subjects in any language; they are comprehensive, clear, and distinct. Right or wrong, the

author gives forth no uncertain sound, but his facts and his opinions are put so clearly and concisely that he who runs may read. In regard to Quincke's article on the diseases of the vascular system, arteries, veins, and lymphatics, we know no other equally comprehensive article in any language, and to get the same information elsewhere would require very special knowledge of the subject indeed, and would, after all, be difficult. Indeed, this is the great characteristic of this cyclopædia in all its departments; its authors are mostly young men educated up to present views, and yet with a very excellent knowledge of the past history of medicine, their lives have been spent in high-pressure times, and they know the value of time, so that we are spared interminable disquisitions upon minutiae of no value, while everything of consequence is put before us as clearly and tersely as possible. No doubt, German treatment predominates, and is not always agreeable to our notions, but the pathological science upon which it is based is the same all over the world, and in the spread of that science—so clearly expounded in these volumes—we have the surest guarantee for the origination and subsequent spread of correct principles of treatment, whether we shall follow them or set them right in this matter. But we must confess, that if we take the very important disease of pericarditis, and compare the treatment of it as laid down by Bauer in this cyclopædia, and by Sibson in the last-issued volume of Reynold's *System of Medicine*, there cannot, we think, be two opinions as to which method is the most rational, the most reasonably expounded, or most in accordance with modern views. Volume vii. is devoted mainly to the diseases of the chylopoetic system, and of it the gem is Leichtenstern's treatise on constriction, occlusion, and displacements of the intestines, which is quite a model in its fulness of facts and concision of diction. The historical introduction is very well done, the illustrations are clear and distinct, and the whole paper is full of information. Leube is already well known to the British reader by the New Sydenham Society's translation of his lecture on the treatment of diseases of the stomach, in Volkmann's *Sammlung*. The fuller treatise in this volume upon the same subject is no less admirable, and contains a very full account of the treatment of dilatation of the stomach by the use of the syphon or stomach-pump, a plan of treatment the use of which has now been extended, with advantage, beyond the comparatively few cases of gastrectasia to which alone it was at first thought applicable. Volume xi. contains a work on the diseases of the peripheral cerebro-spinal nerves by Dr Erb, who has been a distinguished leader in that advance in Neuro-pathology, so much of which has been due to the investigations of German physiologists and physicians. Volume xii. contains an account of the diseases of the brain and its membranes; and in it perhaps the two most interesting papers are Nothnagel's one on anæmia, hyperæmia, hemorrhage, thrombosis, and embolism of the

brain, and Heubner's one on syphilitic disease of the brain, though Huguenin's paper on acute and chronic inflammations of the brain and its membranes is perhaps of even greater importance. On the whole, these volumes very ably represent the state of our knowledge in regard to the diagnosis and treatment of the diseases of which they treat, and had we any doubt about any disease, or any difficulty as to its treatment, we know no work to which we could turn with more perfect certainty of finding the most recent views upon the point in question, whatever that might be, than to the various volumes of Ziemssen's *Cyclopædia*. It is a very high compliment to any work to make such a statement regarding it, but it is a compliment which in this case is well deserved. We feel that we can give this work no higher recommendation, and we hope that this may suffice to induce all our readers to place it on their bookshelves. There is no single work in the English language which contains so much information likely to be useful to the general practitioner, or which is so full of references to the older treatises, for those who may desire fuller information on any point. No subject treated of will be found antiquated, the information conveyed is invariably up to date.

Surgical Diagnosis, a Lecture delivered to the Medical Students of the Melbourne Hospital. By JAMES GEORGE BEANEY, F.R.C.S.E., Senior Surgeon to the Hospital. F. F. Baillière, Melbourne: 1877. Pp. 32.

WHY this little address was printed, published, and sent about the world, we can hardly tell, for there is really nothing in it that has not been said very much better many a time before. There are several most amusing instances of misused, because misunderstood, adjectives; a good many cases quoted, which are enlivened by personality and adorned by egotism. There is a vein of "goodyness" and innocence which is inexpressibly diverting.

Longfellow, of course, does not escape quotation, "Lives of great men, etc.," "Segnius irritant," and the rest of the couplet, turn up as usual.

One success the author has achieved, he has kept Ambrose Paré out of it.

Hughlings, Jackson, Clifford, Allbutt, and Spencer, Wells, appear as six single gentlemen instead of three. However, we may hope the profession in Melbourne appreciate the admirable paper and binding which adorn the work.

Internal Urethrotomy, with its Modern Improvements. By EDWARD LUND, F.R.C.S., Professor of Surgery in Owens College. London: J. & A. Churchill: 1871. Pp. 33.

THIS neat little *brochure* is an account of the method of performing internal urethrotomy approved by the author, and of the details of a very bad case of stricture in which he used it. The method is ingenious; the case was in the end a success. The observations, not only on the case but on the whole subject of the treatment of stricture, are sensible, shrewd, and show the author to be a careful practical surgeon. Still we must entirely disagree with a statement, or rather two statements made in the preface. He says, "Hitherto, surgeons seem to have directed their attention more to the relief of stricture than to its cure." Why, the profession is overwhelmed with varieties of ready methods—splitting, stretching, internal urethrotomy, external urethrotomy, perineal section. He also says, and in thus saying shows a beautifully-sanguine disposition, "It is the author's hope that a careful perusal of this essay may lead to the latter result (cure), being the more frequent consequence of such treatment."

St Thomas's Hospital Reports. New Series. Edited by DR BRISTOWE, Dr JOHN HARLEY, and Mr WAGSTAFFE. Vol. VII. London: J. & A. Churchill. 1876.

THIS is a goodly volume of 392 pages, containing, besides every important detail regarding the hospital, twenty articles of more or less interest by medical officers, by lecturers, and former pupils of the school. We are inclined to think, that in consideration of the very ample field which the weekly, the monthly, and the quarterly press afford for professional authorship, it would be desirable for the editors to subject such publications as the present to a more rigid criticism, so that they should really be the *crème de la crème*, in all respects worthy of an institution so distinguished by its present efficiency and its ancestral history. In these days of prolific writing, a smaller volume containing the necessary statistical tables and a few carefully-considered, mature, and well-written papers would be more acceptable and more valuable as records for preservation than a numerous array of articles which might appear with greater propriety in the ephemeral pages of a weekly journal. These remarks are quite consistent, however, with a cordial admission that the volume recently published contains a great amount of valuable matter. There is an excellent and profusely illustrated paper by Mr Francis Mason, one of the surgeons, on Cleft Palate, in which he accords due credit to his predecessors in a careful retrospect of

what has been already done, and then gives modestly and clearly the results of his own thoughtful experience. Dr Thomas B. Peacock, already well known by much genuine work as an enlightened physician, contributes an elaborate paper on Intracranial Aneurisms. His *résumé* of former knowledge on the subject is evidently very reliable, and his view of the statistics is interesting, although the practical deductions may, from the nature of the affection, be scanty. In one case, a diagnosis was made eleven years before the death of the patient, and in another, the affection was cured by the ligature of the common carotid artery. It seems a remarkable fact, that cerebral aneurisms occur in early life much more frequently than the ordinary forms of aneurism. "Thus, out of the 79 cases no less than 4 were in persons between thirteen and fifteen years of age, and 5 others between fifteen and twenty." We quote the following remarks:—"From the extreme tenuity of the coats of the cerebral vessels it is difficult to suppose that they should be capable of expansion so as to admit of the formation of a true *sacculated aneurism*, and it seems equally unlikely that the internal coats should be ruptured without the external also giving way, so that a *consecutive false aneurism* should be formed; yet in several of the published cases it is stated that the three arterial tunics could be traced in the sacs, and in others it is reported that the internal coats were wanting, though whether this was due to their having been originally ruptured, or to the gradual expansion of the sac, does not appear. In some cases the aneurism was apparently the result of accident, and in one the sac is said to have been bounded by the pia mater, the whole of the arterial tunics being wanting in one part. In some cases the disease seems to have originated in embolism, the vessel being probably gradually expanded when the current of blood is restored in the obstructed vessel. If this be, as it very possibly may be, a frequent mode of origin, it will explain the large size which the sacs sometimes attain, even when springing from vessels of small calibre, for the fibrinous deposit would strengthen the walls of the vessel, and so enable them to be expanded to a greater extent than they would otherwise be without giving way. Not unfrequently the aneurisms seem to be caused by syphilis, and in this case the expansion is probably due to the vessels being involved in disease of the membranes of the brain."

Mr William MacCormac records a case of Removal of the Scapula. The patient was a young woman, æt. 29. She had experienced pain in the shoulder for sixteen years; but nine years elapsed before a tumour, the size of a walnut, could be felt below the spine of the scapula. At Christmas 1875 it had increased slowly and painlessly to the bulk of an orange. On the 26th of April 1876, the rate of increase had become much more rapid and attended by great pain, giving the poor girl an aspect of great anxiety and exhaustion. The tumour, now as large as a boy's head, involved

the whole scapula except the tips of the acromion and coracoid processes; it bulged up into the neck beneath the trapezius, lay over the subclavian vessels, and filled the posterior half of the axilla. The skin was tense over the tumour, adhered to the more prominent part, and was there altered in colour. One or two enlarged lymphatic glands could be felt over the clavicle and in the axilla.

We draw attention to the following statement, which indicates a great surgeon, and accounts in some measure for the success of the subsequent operation. "In considering the steps of the operation, I thought it desirable to experiment with my assistants, beforehand, several times on the dead subject, so that each of them might know what to do, and when to do it. It was clear that loss of blood was especially to be guarded against, as the patient was quite unfit to sustain any serious hæmorrhage, in addition to the inevitable shock."

To effect this, Mr MacCormac, as a preliminary measure, sawed through the clavicle just within the ligaments, which rendered unnecessary the disarticulation at the acromio-clavicular joint in an after stage of the operation. Moreover, he arranged so as to divide the subscapular artery, quite towards the end, an assistant grasping the flap. We need not go into the details of the operation. Scarcely any blood, not more than two ounces, was lost from first to last. The tumour, after removal, weighed within a fraction of seven pounds. The dressings were made with carbolized-oil lint covered by salicylic wool.

The patient left the Hospital in August, the wound all but healed, and with a fair use of her arm. We regret to add that she returned in November with evident return of the disease in the lungs, and a growth above the clavicle as large as a walnut. "The microscopical examination of both the primary and secondary growths showed the characters of myxoma, probably engrafted on a chondromatous base."

The last paper in the volume is an interesting and well-written notice of Mr Richard Gullet Whitfield, the late apothecary to St Thomas's Hospital. His grandfather had held the office from 1752 until 1800, dying at the age of seventy-six in the following year. His father succeeded him in 1800, retired in 1832, and was succeeded by Mr Whitfield, who continued apothecary down to the removal of the hospital to its present site in 1871. He then retired on a pension, but performed the duties of medical secretary to the school till within six weeks of his death, on 20th February 1877, at the ripe age of seventy-six. He seems to have been an able man, of much individuality of character, and a very useful public servant. He excelled mainly as an organiser and administrator. He took a personal supervision and direction of the ventilation and general sanitary condition of the Hospital; he gave much attention to the improvement of the diet and comfort of the patients; he had definite and enlightened views on the question of

out-patient hospital relief; and, above all, the improvement of the nurses and of the nursing, which has been so thoroughly effected in St Thomas's during the last twenty years, was due in no small degree to his persistent advocacy. From 1860 to 1872, he taught the probationers, by lectures and examinations, in the Nightingale Training-School, the establishing of which had been largely due to him. We recommend the notice of this useful man to the attention of all our readers.

Guy's Hospital Reports. Edited by H. G. HOWSE, M.S., and FREDERICK TAYLOR, M.D. Third Series. Vol. XXII. London: J. & A. Churchill: 1877.

THIS is a very good volume of reports, and is worthy of the great Hospital from which it emanates. It extends to 527 pages, and we are not sure that much of the material could have been dispensed with. In saying this we have no wish to make comparisons with any other institution; but merely to express the hope, that if, on a future occasion, the available articles should fall short of the same high standard, the editors will not deem it necessary to issue a volume of equal dimensions. Mere bulk should be disregarded, excellence being the primary consideration.

In our limited space we cannot notice all the nineteen articles which compose the volume, irrespective of the various lists and advertisements connected with the school. The first is a concise, but clear and weighty paper, the result of lengthened practical experience, by Mr Edward Cook, one of the consulting surgeons, on Primary *Syphilitic Sores*, as distinguished from simple sores which do not contaminate the blood. "We wait," he says, "for some modification in the appearance of the sore, some alteration in its condition, before we hazard a decided opinion as to its nature or results." Induration, the result of solid effusion, is the most decided characteristic of a syphilitic sore. But his experience leads him to think that the extent and density of the induration is governed much more by its situation and the textures involved than by the virulence of the inoculated poison. The amount of loose subcutaneous cellular membrane existing in different parts makes the difference. "The more areolar tissue, the more solid deposit. Its abundance favours, while its deficiency resists the induration which is so characteristic of syphilitic inoculation. Thus we shall find, that sores on either surface of the prepuce are accompanied with the greatest amount of induration." "Sores on the body of the penis hold an intermediate character as regards solid deposit. Sores incurred on the surface of the glans and around the orifice of the urethra are accompanied by the smallest amount of solid deposit, the induration being hardly appreciable, although it sometimes forms a delicate but very characteristic ring around the lips of the

urethra." Sores occurring, as is often the case, in the coronal groove involving the root of the prepuce and the base of the glans, exemplify the same law; there is abundance of solid effusion on the prepuce, little or none on the glans. Mr Cook lays no stress on the size of a sore as having any particular influence on its results. After comparing the records of a vast number of complete syphilitic cases, he concludes that the seat of the primary ulcer is a most important feature in diagnosis and prognosis. The further the sore is removed from the solid structures of the penis, the glans and body, the less severe will be the constitutional symptoms; syphilitic sores on the prepuce become more serious the nearer they are to the glans and body of the penis; sores on the body of the penis are to be dreaded the nearer they are to the pubes; sores on the glans near its base are most to be dreaded; sores on the frenum become more or less important according to their extent.

The next paper, by Dr Samuel Wilks, on "Cerebritis, Hysteria, and Bulbar Paralysis, as illustrative of arrest of function of the Cerebro-spinal Centres," requires, deserves, and will amply repay careful study. It is evidently the outcome of extensive and accurate observation, accompanied by much thought and cautious induction. Moreover, it is very suggestive, and, if cordially pondered by competent readers, may give a new start to both cerebral pathology and psychology. Any account of it that we can give at present must be very limited and unsatisfactory, as the essay is tersely written, and yet extends to some fifty large octavo pages. He combats the common idea, that cerebritis, inflammation of the cerebrum, is accompanied by anything in the form of pain, disturbance, or excitement. "Inflammation tends to destroy and paralyze parts; increased function and excitement are more closely related to the natural state of an organ." "In simple inflammation of the substance of the brain, including both gray and medullary matter, the symptoms are mainly those of increasing torpidity, and even in those acute forms of meningitis, where the gray matter on the surface is involved, this lethargy may be the only symptom." "In cerebritis, then, the symptoms are that of impairment or loss of function of the cerebral hemispheres; there is want of volition and a loss of perception, the latter including not only common sensation but the special senses." In such cases, the absence of true paralysis shows that the spinal system is not affected, and by the spinal system is meant, not only the cord which is contained in the spinal canal, but the medulla oblongata, crura cerebri, and central ganglia within the cranium. There is a difficulty sometimes in distinguishing such cases from others in which there is hysteria and arrest of cerebral action. "It seems to be absolutely true, that the machinery of the nervous centres may actually cease working or functionizing, and then, like an unwound-up watch, be for all active purposes diseased or dead." "If two watches were lying on the table and motionless, it would be impossible to

decide, without any farther knowledge, which was quiet as a result of a broken spring, and which as a result of not being wound up."

"This complete abeyance of the supreme functions of the nervous system is one of the most characteristic features of hysteria; so much so, that where no one has succeeded in giving a definition of the disease, this inaction of the cerebral hemispheres, leaving the spinal system to have its full play, gives as good and correct an idea of its nature as any other definition." "The theory which ascribes the complete abeyance of the will and of sensation in hysteria to a cessation of the higher functions of the cerebral hemispheres is quite in accordance with the facts observed in this disease; if we also believe that during the absence of this governing power of the brain the spinal system is allowed to run riot, we can understand the meaning of the convulsions, strange movements, and emotional excesses so frequently witnessed in this malady."

On the subject of "bulbar paralysis, organic and functional," some important remarks occur regarding atrophy of the muscles. "The pathological facts are agreed upon by all, but the more correct observations of late are leading most to the belief that the disease is a primary one of the cord." "Since every muscular fibre has its own nerve twig, and the compound nerve in the limb has a wide origin, it is not unreasonable to suppose that every fibre of the muscle is represented by a gray cell in the nerve-centre. If this be the case, the difficulty of explaining how a small fasciculus of a muscle can owe its working to a central-nerve cause is removed.

Dr Wilks has another paper which cannot fail to interest all who watch the progress of medical science. It traces the history of three notable discoveries in pathology, which are associated with the names of Bright, Addison, and Hodgkin, all of them Guy's Hospital men. The concluding sentences may be quoted as giving a just estimate of these eminent men. "Bright's papers on the kidney constituted only a portion of his writings, and to those who knew Addison, it is almost absurd to rest his fame on a discovery made towards the close of his career, and when his clinical teaching had reached its end. To his pupils his essay on suprarenal disease is nothing compared with what he did during a long series of years in the elucidation of the forms of phthisis and some other diseases. It was not a mere scientific discovery, but his powerful lectures, which impressed the last generation of Guy's men. Whilst to us his work on suprarenal disease is a trifle, to the outside world and to posterity it may be that which will perpetuate his fame.

"Again, with Hodgkin, it is probable that the association of his name with the glandular disease may assist in the extension of his posthumous fame abroad, but to us the accidental discovery of his paper on the subject added but little to the estimation in which he was already held."

We regret that our limits prevent us even from enumerating many other valuable papers in this volume which deserve perusal.

PROFESSIONAL ETHICS AND ETIQUETTE.

IN the student's number, last October, we drew a parallel in regard to medical teaching and examinations betwixt the years 1836 and 1876 ; pointed out the advantages and drawbacks belonging to both periods, and offered a few suggestions as to the more important topics of professional reading and education. Referring those who are now entering upon their curriculum of study to that short address, we would say a few words now upon the subjects of professional ethics and etiquette.

Those who have been long familiar with the responsibilities, the anxieties, and fatigues of actual practice, look back to the time when, with thoughts almost wholly engrossed by the acquisition of knowledge in preparation for a diploma or a degree, they could attach no very definite meaning to the phrase *Professional Ethics*, being still strangers to the scenes and circumstances to which it is applicable. All students of medicine are in the same position. If really in earnest, they are getting fresh glimpses every day of attractive fields of knowledge, which they have never trod before, and are looking forward hopefully to a long course of usefulness and honour which their imagination has already bathed in sunshine. This state of feeling, so characteristic of youth, is almost invariably associated with unselfishness and generosity towards companions, with freedom from everything like jealousy or envy, and with a ready cordiality to help and encourage each other along the path which they are all traversing. The student's life is not without its own trials and anxieties ; and every young man, true to the characteristics of our restless and unsatisfied human nature, longs and sighs for its termination ; but the pleasures doubtless preponderate on the whole, and in after years, that vernal season, when everything was fresh and full of hope, is usually looked back upon with a tender yet pleasing regret. Why then introduce a topic prematurely which will obtrude itself quite soon enough, when the lighter occupations of the student have been succeeded by the heavier responsibilities of the practitioner ? In reply to this plausible objection, we quote the old adage : " forewarned, forearmed," and add, that we do not mean to enter into many details concerning the individual and reciprocal duties of medical men ; but rather to enunciate a few guiding principles, applicable to students and practitioners alike. To view these in their higher religious aspect, however satisfactory and proper at another time, would be unsuitable for the pages of a strictly professional journal ; we shall endeavour, therefore, to regard them from the lower ground of moral and social considerations. The higher motives, we admit, are not essential to a strict and unsullied observance of all the relative and reciprocal duties of medical men ; for there have been respected members of our profession in all times, and

we have known such, who, by a kind of natural instinct, have maintained an unchallenged reputation for everything upright and generous and gentlemanly, without being professedly and unmistakably under the power of Christian motives. Such men are a law unto themselves. Still, it cannot be doubted, that true religious motives furnish the most sure and enduring foundation on which to rear a solid fabric of professional ethics.

We shall suppose the case of a conscientious and painstaking student, who has made a good use of his opportunities, and spared no trouble in accomplishing himself for the active duties of his future life. He probably finds, after some time in practice, that his patients are few, his emoluments small, and his prospects none of the brightest. Such a one may be tempted to indulge in feelings both unamiable and unjust. He is very apt to conceive and harbour unkindly sentiments towards his more prosperous brethren, attributing their success in life to other causes than professional merit. Almost unknown to him feelings of jealousy and envy creep into his bosom and nestle there; and we need not wonder if, as opportunities offer, he gives expression to the prevailing train of his thoughts by derogatory remarks about the individuals so regarded. In this way the confidence reposed by patients in their own medical friend is in danger of being sapped and undermined, doing serious injury thereby to him in whose knowledge and skill they have hitherto trusted. A like transgression of right feeling and propriety may be committed, *of set purpose*, by another man for the attainment of his own purely selfish ends; but we suppose the case of one who has been led to it step by step, almost unconsciously, and who may painfully regret the issue.

Now, we would suggest two considerations to any young member of the profession who may be conscious of this temptation. In the first place, let him try honestly to look inwards, and explain his own slow advancement by some manifest drawback in himself; by something defective in his manner or general bearing; by a want of what the French call *savoir faire*; by a lack, perhaps, of real benevolence or of heart-felt interest in those committed to his charge. Such introspection may do good, and can never do any harm. In the second place, he will find a still more sovereign remedy by cherishing the conviction that all the events and arrangements of life are at the disposal of One, without whom—as we are taught, on His own authority—nothing happens, not even the fall of a sparrow to the ground. It is the wise remark of a German writer, whose name we have forgotten, that “the belief in a particular providence is the secret of happiness.” At all events, it will be found that he who entertains that conviction carries in his bosom a talisman which will protect him effectually against the power of many temptations, and specially of the one to which we have been alluding. For only consider: your slow advancement as a professional man, if it be really so, is the

discipline deemed necessary by the wise Disposer for your highest welfare in the long run; attend, then, to present duty, and leave the ultimate issue in His hands. He it is also who gives prosperity and success to your brother, possibly as a mark of approbation,—probably as a discipline suited for him, but not suited for you. A cordial recognition of these considerations will exert a very salutary influence upon all professional intercourse, preventing uncomfortable feelings of rivalry; enlarging the heart, so as to appreciate the merits of a competitor, and to give every man his due. This liberality has characterized many members of our noble profession, and those especially who have occupied a foremost place in its ranks.

Medical men are exposed to another class of temptations from the side of their supposed worldly interests. Let us particularize a few instances in illustration:—You are called on to furnish a certificate which may justify or explain the absence of an official person or public servant from his duty. Such documents are expected to be forthcoming at once, almost as a matter of course; and the individual to be obliged may even be annoyed and take umbrage, if his medical referee thinks it needful to make accurate inquiries into the case, and performs the duty in a manner strictly formal and conscientious. Let no fear of giving offence, no dread of forfeiting the favour of your patient, tempt you to swerve by a single hair-breadth from truth and rectitude; for in so doing you will not only break the moral law, but sin against the commonwealth, and act unworthily of your honourable calling. Another phase of the temptation appears when you are required to testify to the personal or family health of a patient who is a candidate for some desirable situation, or wishes to effect an assurance upon his life. In such cases as these there is a temptation to answer queries in the most favourable terms; to withhold disagreeable information; and, in short, to avoid everything that has any tendency to annoy or offend the person who employs you. Again, even in courts of law, when medical men are summoned as witnesses on the opposite sides of a case, do we never see indications of a similar danger? Can Charity herself keep us from suspecting that in certain circumstances even the clear eye of science is affected for the time by the refracting medium of private friendship or professional relationships?

Now, it behoves us in these and analogous predicaments to exercise a wholesome jealousy over ourselves, and to perform the duty to which we are called with a single eye to what is just and true, falling back on those firm principles which lie at the foundation of sound morality.

Many circumstances occur in which our honesty and discretion and good feeling as medical men are severely tested. Our opinion is asked by anxious relatives as to the exact nature and probable issue of a case; the patient himself may appeal to us for our

prognosis, or, as is oftener the case, may be manifestly dying in ignorance of his position; family secrets are confided to us, or may be ascertained through our professional opportunities. In all these and in kindred circumstances, our conduct must be guided by sympathy, by honour, by discretion; but there is a rule which solves almost every difficulty, and can be trusted at all times. *Let us imagine ourselves in the position of our friends or patients, and ask what we ourselves would like to be said or done in similar circumstances.*

Another department of professional ethics may be glanced at—the proper management of those fierce controversies and disputes which occasionally break forth where there is a great difference of sentiment, and when personal or party interests add fuel to the fire. Dislike and alienation are apt to follow; so that men who, for the sake of the community as well as for their own, ought to co-operate unanimously for the public welfare, remain mutually opposed. This state of things appears quite incongruous in a profession whose aims and objects are so high,—a profession which, as was well said lately by a distinguished diplomatist, approaches nearer than any other that can be named to the daily occupation of the Lord Jesus Christ during his earthly ministry. When misunderstandings and quarrels therefore do arise, it becomes very important to bring them to a speedy and satisfactory termination. Much might be done by the arbitration of mutual and judicious friends, who ought to be encouraged and stimulated in their endeavours by remembering the beatitude, “Blessed are the peacemakers, for they shall be called the children of God.” It is most desirable, moreover, that such unfortunate disputes should be confined as much as possible to our own fraternity, and not divulged unnecessarily to the general public; for, unfortunately, quarrels of medical men are almost proverbial, and have a natural tendency to lower the standing and credit of our profession. This last observation may seasonably remind us that higher considerations than our own personal and private interests must be regarded. We should accustom ourselves to look back on the long and venerable line of our professional ancestry,—not merely on the distinguished few who, in successive ages, have extended the boundaries of our science and improved our art, but also on that crowd of useful and worthy although un conspicuous men who, having served their generation, each in his own narrow sphere of labour, are now almost equally forgotten with the rude forefathers of the countryside among whom they toiled. By thus claiming kindred, so to speak, with the men of other times, and entering into their labours, we shall escape the temptation, not unusual in these days of haste and hard-driving, to undervalue the attainments of our predecessors, despite the accumulated and transmitted wisdom and experience of many generations. We shall also avoid the tendency which some have to gratify personal vanity by speak-

ing lightly and disparagingly of their professional brethren as a body, or by affectedly throwing out doubts in general company regarding the efficacy of medicine and even the utility of the healing art. As a rule, those who thus speak are not adepts in practice. In addition to the graver questions of medical ethics, there are others which may be referred more accurately to the department of professional etiquette. On the due adjustment and observance of these must depend much of the comfort and satisfaction of our intercourse both with our brethren and with our patients; and, therefore, the subject is well deserving of careful and anxious attention. It is sometimes difficult at first sight for a man to steer his way successfully through complications occasioned by inadvertence or carelessness on the part of patients, and want of firmness on the part of the practitioner. We shall suppose a case: Mr A. goes away on his annual holiday and leaves his patients under the charge of his neighbour Mr B. He returns and finds everything satisfactory. After a few months B. informs A. that Miss C., whom he had seen during his absence, sent for him lately and requested him to attend her, and that he has already done so. Naturally A. is angry, and regards B. as a great transgressor of professional etiquette. B. says, in self-defence, that he could not do otherwise, as Miss C. was determined to have his services. B. is manifestly in an awkward position. Probably he was free from any sinister purpose. But, even for his own sake, he ought to have shrunk from appropriating any patient of the friend who had trusted him with his practice. If there was no other medical man available, and Miss C. had resolved no longer to employ her former attendant, then, in that case, B. ought to have called on A. *before* acceding to Miss C.'s request, and laid the whole matter before him in a frank and friendly manner. Were A. under these circumstances to act sensibly and with due self-respect, he would say nothing more about the matter; although almost inevitably some uncomfortable feelings would subsist between A. and B. for a time. This is a specimen of what happens in the course of professional life; and we believe that in no better way can you acquire delicacy in discerning, and tact in avoiding, such sources of disquietude than by having recourse habitually in your dealings with your professional brethren to the golden rule already referred to under the head of medical ethics, namely, *to do to others as you would have others do to you*. Gentlemanly feeling ought to be a sufficient guide many will think—and so it ought; but it is sometimes desirable to support our natural instincts by a rule of action easily remembered. The patient, in the case supposed, might be capricious, but no one will deny her undoubted right to change her doctor; yet, in doing so, she placed both gentlemen in an unpleasant position, requiring mutual consideration and delicacy of handling. With the above rule of action, we shall never be in any serious difficulty how to proceed, and if we should unfortunately fail to please

or conciliate, we shall at least retain the *mens conscia recti* within our own breast.

In connexion with this last remark, remember that happiness in life depends much more on the frame and temper of our own minds than upon the outward circumstances of our condition. We would say to young men beginning the study of medicine: Your individual success in life will be necessarily very various. Some of you may possess endowments which, with God's blessing, will secure both emolument and reputation; for it is always true, *ceteris paribus*, that "a man's gift maketh room for him, and bringeth him before great men;" but the majority will probably find, that the bright anticipations of youth are not fully realized in the after stages of manhood and advanced life, in so far at least as these early hopes embraced pecuniary acquisitions or professional fame; but there are higher and nobler objects than these, to which we are called, such as useful knowledge and attainments, benevolent affections, and active virtue. All of you may aspire to and cultivate these with cheerful prospects of success. Your sphere may be limited; your opportunities of doing good comparatively small; but remember that these have been determined and allotted by One who cannot err. Be thankful that He has work for you at all in a calling so noble and benevolent; embrace all the opportunities within your reach for gaining scientific knowledge and practical skill; the time may yet come, perhaps unexpectedly and sooner than you think, when you will be summoned to positions of responsibility and eminence; but even should it be otherwise, still persevere in the quiet, conscientious, steady performance of appointed duty, looking forward to that better, higher region, where every man shall receive according to his works.

INFORMATION REGARDING MEDICAL EDUCATION AND EXAMINATIONS.

THE following are the Regulations of the General Medical Council for the Registration of Medical Students:—

I.—PRELIMINARY EXAMINATIONS.

1. That no person be allowed to be registered as a Medical Student unless he shall have previously passed a Preliminary Examination in the subjects of General Education as hereinafter provided.

2. That it be delegated to the Executive Committee to prepare Annually and lay before the Council for Recognition a List of Examining Bodies, whose Examinations fulfil the conditions of the Medical Council as regards General Education.

3. That, for the present, Testimonials of Proficiency granted by Educational Bodies, according to the subjoined list, be accepted, the Council reserving the right to add to, or take from, the list.

N.B.—A Degree in Arts of any University of the United Kingdom or of the

Colonies, or of such other Universities as may be specially recognised from time to time by the Medical Council, is considered a sufficient Testimonial of Proficiency.

List of Examining Bodies whose Examinations fulfil the Conditions of the Medical Council, as regards Preliminary Education.

(1.) UNIVERSITIES OF THE UNITED KINGDOM.

Oxford.—Examination for a Degree in Arts. Responsions, Moderations, Local Examinations (Senior), Certificate to include Latin and Mathematics. Local Examinations (Junior), Certificate to include Latin and Mathematics, and also one of the following optional subjects:—Greek; French; German; Natural Philosophy, including Mechanics, Hydrostatics, and Pneumatics.

Cambridge.—Examination for a Degree in Arts. Previous Examination. Local Examinations (Senior), Certificate to include Latin and Mathematics. Local Examinations (Junior), Certificate to include Latin and Mathematics, and also one of the following optional subjects:—Greek; French; German; Natural Philosophy, including the Elements of Statics and Hydrostatics.

Durham.—Examination for a Degree in Arts. Examination for Students in their second and first years. Registration Examination for Medical Students. Local Examinations (Senior), Certificate to include Latin and Mathematics. Local Examinations (Junior), Certificate to include Latin and Mathematics, and also one of the following optional subjects:—Greek; French; German; Natural Philosophy, including Mechanics, Hydrostatics, and Pneumatics.

Oxford and Cambridge Schools' Examination Board.—¹ Certificate to include Arithmetic, including Vulgar and Decimal Fractions; Algebra, including Simple Equations; Geometry, First two books of Euclid; Latin, including Translation and Grammar; and one of the following optional subjects:—Greek, French, German, Mechanical Division of Natural Philosophy.

London.—Examination for a Degree in Arts or Science. Matriculation Examination.

Aberdeen, Edinburgh, Glasgow, and St Andrews.—Examination for a Degree in Arts. Preliminary Examination for Graduation in Medicine or Surgery.

Edinburgh.—Examination of (Senior) Candidates for Honorary Certificates under the Local Examinations of the University of Edinburgh.

Glasgow.—Senior Certificate of Local Examination Board of the University of Glasgow, Certificate to include English Literature, Arithmetic, Algebra, Geometry, Latin, and also one of the following optional subjects:—Greek, French, German, Natural Philosophy.

St Andrews.—Honours Certificates granted under Local Examinations, Certificate to include English Literature, Arithmetic, Algebra, Geometry, Latin, and also one of the following optional subjects:—Greek, French, German, Natural Philosophy.

Dublin.—Examination for a Degree in Arts. Public Entrance Examination.

Queen's University (Ireland).—Examination for a Degree in Arts. Entrance Examination. Examination for the Diploma of Licentiate in Arts. Previous Examination for B.A. Degree.

(2.) OTHER BODIES NAMED IN SCHEDULE (A) TO THE MEDICAL ACT.

Royal College of Surgeons of England.—Examination conducted under the Superintendence of the College of Surgeons, by the Board of Examiners of the Royal College of Preceptors.

The Society of Apothecaries in London.—Examination in Arts.

Royal Colleges of Physicians and Surgeons, Edinburgh.—Preliminary Examination in General Education, conducted by a Board appointed by these two Colleges combined.

¹ The *English* is provided for by the following *Resolution* of the Executive Committee, passed 27th October 1876:—

"That, as every Candidate for the Certificate of the Oxford and Cambridge Schools' examination Board is required to answer questions in such a manner as to satisfy the

Faculty of Physicians and Surgeons of Glasgow.—Preliminary Examination in General Education.

Royal College of Surgeons in Ireland.—Preliminary Examination, Certificate to include Mathematics.

Apothecaries' Hall of Ireland.—Preliminary Examination in General Education.

(3.) EXAMINING BODIES, IN THE UNITED KINGDOM, NOT INCLUDED IN SCHEDULE (A) TO THE MEDICAL ACT.

Royal College of Preceptors.—Examination for a First Class Certificate.

The Examiners for Commissions and Appointments in Her Majesty's Service, Military, Naval, and Civil.—Certificate to include all the subjects required by the General Medical Council.

(4.) INDIAN, COLONIAL, AND FOREIGN UNIVERSITIES AND COLLEGES.

Universities of Calcutta, Madras, and Bombay.—Entrance Examination, Certificate to include Latin.

McGill College, Montreal.—Matriculation Examination.

University of Toronto, Trinity College, Toronto, Queen's College, Kingston, and Victoria College, Upper Canada.—Matriculation Examination.

King's College, Nova Scotia.—Matriculation Examination. Responsions.

Medical College, Halifax, Nova Scotia.—Matriculation Examination.

University of Fredericton, New Brunswick.—Matriculation Examination.

University of Melbourne.—Matriculation Examination, Certificate to include all the subjects required by the General Medical Council.

University of Sydney.—Matriculation Examination.

University of the Cape of Good Hope.—Matriculation Examination.

University of Adelaide.—Matriculation Examination. (Minutes, Vol. XIII., p. 356.)

Codrington College, Barbadoes.—1. English Certificate for Students of two years' standing, specifying the subjects of Examination. 2. Latin Certificate, or "Testamur."

Tasmanian Council of Education.—Examination for the Degree of Associate of Arts, Certificate to include Latin and Mathematics.

Christ's College, Canterbury, New Zealand.—Voluntary Examinations, Certificate to include all the subjects required by the General Medical Council.

South Australia.—*South Australian Institute, Adelaide.*—Preliminary General Examination: First Class Certificate.

4. That it be recommended to the Licensing Boards not to accept the Certificate of Proficiency in General (preliminary) Education from any of the Bodies, the names of which are contained in the list annually circulated, unless such Certificate testify that the Student to whom it has been granted has been examined in the following subjects:—1. English Language, including Grammar and Composition.¹ 2. Arithmetic, including Vulgar and Decimal Fractions. Algebra, including Simple Equations. 3. Geometry—First two books of Euclid, or the subjects thereof. 4. Latin, including Translation and Grammar.

And in one of the following optional subjects:—Greek. French. German. Elementary Mechanics of solids and fluids, meaning thereby Mechanics, Hydrostatics, Pneumatics, and Hydraulics.

Examiners that he has an adequate knowledge of English Grammar and Orthography, this shall be held as conforming to the requirements of the Medical Council in reference to English Language."

¹ The General Medical Council will not consider any Examination in English sufficient that does not fully test the ability of the candidate,—1st, To write a few sentences in correct English on a given theme, attention being paid to spelling and punctuation as well as to composition. 2d, To write a portion of an English author to dictation. 3d, To explain the grammatical construction of one or two sentences. 4th, To point out the grammatical errors in a sentence ungrammatically composed, and to explain their nature. 5th, To give the derivation and definition of a few English words in common use.

Provided always, that an Examination may be accepted as satisfactory that secures, on the part of the Candidate passing it, a sufficient grammatical knowledge of English.

II.—REGISTRATION OF MEDICAL STUDENTS.

7. Every Medical Student shall be registered in the manner hereinafter prescribed by the General Medical Council.

8. No Medical Student shall be registered until he has passed a Preliminary Examination, as required by the General Medical Council, and has produced evidence that he has commenced Medical Study.

9. The commencement of the course of Professional Study recognised by any of the Qualifying Bodies, shall not be reckoned as dating earlier than fifteen days before the date of Registration.

10. The Registration of Medical Students shall be placed under the charge of the Branch Registrars.

11. Each of the Branch Registrars shall keep a Register of Medical Students according to the subjoined Form:—

Form for the Registration of Medical Students.

Date of Registration.	NAME.	Preliminary Examination and Date.	Place and Date of Commencement of Medical Study, as certified by a Master, Teacher, or Official in a Medical School or Hospital.

12. Every person desirous of being registered as a Medical Student shall apply to the Branch Registrar of the division of the United Kingdom in which he is residing, according to the annexed Form, which may be had on application to the several Qualifying Bodies, Medical Schools, and Hospitals; and shall produce or forward to the Branch Registrar a Certificate of his having passed a Preliminary Examination, as required by the General Medical Council, and evidence that he has commenced Medical Study.

The following pages contain a tabular abstract of the regulations of the various Licensing Boards, as well as a list of the Hospitals, Dispensaries, etc., attached to our Scotch Medical Schools; also the regulations for the Army, Indian, and Navy Medical Services. The space at our disposal does not allow of more detailed information. But, in point of fact, the regulations of all Licensing Boards now correspond much more closely than they used to do, and the regulations of the General Medical Council afford a key to the general requirements of all of them. For special information, application should always be made to the Secretaries of the Licensing Boards; or, in the case of the Universities, recourse may be had to the published Calendars.

The *Preliminary Examinations* are usually held before the commencement, and at the end, of the Winter Session,—viz., in October, March, or April—sometimes also at the end of the Summer Session. The Professional Examinations in Universities are usually after the Winter and during the Summer Sessions; in Edinburgh, however, the first Professional is held in October as well as April. The other Licensing Boards' examinations are held at various periods throughout the year. Special examinations, under circumstances of urgency, can be held at almost any time; but they, of course, entail considerable addition to the expense.

COURSE OF STUDY REQUIRED BY THE VARIOUS BOARDS OF THE UNITED KINGDOM.

	Age.	Anatomy.	Dissections.	Chemistry.	Practical Chemistry.	Materia Medica.	Physiology or Insti- tutes of Medicine.	Surgery.	Practice of Medicine.	Midwifery.	Medical Jurispru- dence.	Pathology or Morbid Anatomy.	Botany.	Natural History.	Practical Pharmacy.	Clinical Surgery.	Clinical Medicine.	Hospital Attendance.	Practical Midwifery.	Dispensary or Out- door Practice.	Vaccination.
	Years.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.
Edinburgh University, M.B. & C.M., . .	21	6	6	6	3	6	6	6	6	6	3	6	3	3	3	6	6	24 {	8 mos. or 6 cas.	6	
University of Glasgow, M.B. & C.M., . .	21	6	6	6	3	6	6	6	6	6	3	6	3	3	3	6	6	24 do.	do.	6	
University of Aberdeen, M.B. & C.M., . .	21	6	6	6	3	6	6	6	6	6	3	6	3	3	3	6	6	24 do.	do.	6	
University of St. Andrews, M.B. & C.M., .	21	6	6	6	3	6	6	6	6	6	3	6	3	3	3	6	6	24 do.	do.	6	
London University, M.R.,	21	6	12	6	1	ers	1	ers	6	1	ers	1	ers	3	1	ers	2 yrs.	4 yrs.	20 cas.	6	
University of Durham, M.B. & M.D., . .	21																				
Dublin University, M.B.,		6	6	6	3	3	3	6	6	6	3	3	3	3			9	24	6 mo.		
" " Surgical Diploma,		12	18	6	3	6	18	12	6	6	3		3		3	27	27	24			
The Queen's University of Ireland, M.D., .		12	12	6	3	3	12	6	6	6	3		3	3	3	12	12	24	3 mo.		
Royal College of Physicians, London, . . .	21	12	12	6	3	3	6	6	12	3	3	6	3	3	3	3	9	24	20 cas.		
Royal College of Physicians, Edinburgh, . .	21	6	6	6	3	3	6	6	6	3	3	3	3	3	3	6	24	20 cas.	6 cases		
King and Queen's Col. of Phys., Ireland, .	21	6	12	6	6	6	6	6	6	6	6	6	6	6	3	6	21	27	6 mo.		
Royal College of Surgeons, London,* . . .	21	12	12	6	3	12*	12	6	3	6	6				3	27*	9*	33			
Royal College of Surgeons, Dublin,	21	18	18	6	6	3	18	18	6	3	3	3	3	3	3	18	9	27			
Royal College of Surgeons, Edinburgh, . .	21	12	12	6	3	3	6	12	6	3	3	3	3	3	3	6	6	24	6 cas.	6	
Faculty of Phys. and Surgeons, Glasgow, .	21	12	12	6	3	3	3	6	12	6	3	3	3	3	3	6	6	24	6 cas.		
For Double Qualification by Royal Col- lege of Phys. and Surg. of Edinburgh, } For Double Qualification by Royal Col- lege Phys., Edinburgh, and Faculty of Physicians and Surgeons of Glasgow, }	21	12	12	6	3	3	3	6	12	6	3	3	3	3	3	6	6	24	6 cas.	6	
Apothecaries' Hall, England,	21	12	6	6	3	3	6	6	6	3	3	6	3		3	6	12	24	6 cas.		
" " Ireland,	21	6	12	6	3	3	6	6	6	6	3	6	3		Appr.	9	27	27	20 cas.		9 mo.

ENGLISH POOR-LAW BOARD.—Candidates for the appointment of Medical Officer are required to be registered under the Medical Act, and must be legally qualified to practise both Medicine and Surgery, in virtue of Diplomas or Licences granted by competent legal authority in England, Scotland, or Ireland.

Information respecting exceptions to these regulations under various circumstances, and other details as to the order in which, according to some Licensing Bodies, the courses should be taken out, etc., must be obtained by consulting the published Charts of the Colleges, etc. Students should apply to the Secretary to each Board which they intend to pass for a detailed copy of its Regulations.

* Students from the Schools of Scotland are admitted to examination at the Royal College of Surgeons of England, if they have followed the course of study required by the regulations of the Royal College of Surgeons of Edinburgh. Students in Scotland, therefore, are not required to attend more than one course of Physiology, six months Clinical Surgery, six months Clinical Medicine, and twenty-four months hospital.

MEDICAL SCHOOLS OF SCOTLAND, 1877-78.

WINTER SESSION.

SUBJECTS.	UNIVERSITY OF EDINBURGH.	SCHOOL OF MEDICINE, EDINBURGH.	UNIVERSITY OF GLASGOW.	ANDERSON'S COLLEGE, GLASGOW.	GLASGOW ROYAL INFIRMARY SCHOOL OF MEDICINE.	UNIVERSITY OF ABERDEEN.	UNIVERSITY OF ST ANDREWS.
Anatomy, Systematic and Practical, with Demonstrations.	Professor Turner.	Dr Handyside.	...	Dr A. M. Buchanan.	Mr H. E. Clark.	Professor Struthers.	...
Physiology, or Institutes of Medicine.*	Professor Rutherford.	...	Professor M'Kendrick.	Dr C. M'Vail.	Mr W. J. Fleming.	Professor Stirling.	Professor Pettigrew.
Chemistry, and Practical Chemistry.	Professor C. Brown.	Drs Macadam and King.	Professor J. Ferguson.	Professor Dittmar.	Dr John Clark.	Professor Brazier.	Professor Heddle.
Materia Medica and Therapeutics.	Professor Fraser.	Dr Molinet.	Professor Cowan.	Dr Morton.	Dr John Dougall.	In Summer.	...
Practice of Medicine.	Professor Grainger Stewart.	Dr Haldane,† Dr Muirhead.	Professor Gairdner.	Dr M. Charteris.	Dr A. Wood Smith.	Prof. Smith-Shand.	...
Surgery.	Professor Spence.	Dr Watson,† Mr Jos. Bell. Mr Chienne. Dr John Duncan.	Professor Macleod.	Dr Dunlop.	Dr H. C. Cameron.	Professor Pirrie.	...
Midwifery.	Professor Simpson.	...	Professor Leishman.	In Summer.	...	Professor Stephenson.	...
Natural Philosophy.	Professor Tait.	...	Professor Sir Wm. Thomson.	Prof. Forbes.	...	Professor Thomson.	Professor Swan.
Natural History.	Professor Str Wyville Thomson.	Dr A. Wilson.	Professor Young.	...	...	Professor Nicol.	Professor Nicholson.
General Pathology.	Professor Sanders.	Dr Wyllie.	Dr Joseph Coats.	...	...	Dr Rodger.	...
Clinical Medicine.	Professors MacLagan and Sanders.	Drs Haldane,‡ Balfour, and Muirhead.	The Physicians of the Western and Royal Infirmaries.		The Physicians of the Infirmary.	Drs Smith-Shand, Beveridge, and Fraser.	...
Clinical Surgery.	...	Dr Watson,† Mr Annandale.	The Surgeons of the Western and Royal Infirmaries.		The Surgeons of Infirmary.	Drs Pirrie, Ogston, and O. Will.	...

* This course is equivalent to that given under the name of General Anatomy and Physiology in the English Schools. Special schedules are issued by the London Boards for their Scotch students, which should always be inquired for.

† These are not conjoint courses, but separate ones by the gentlemen named.

‡ This is a joint course.

MEDICAL SCHOOLS OF SCOTLAND, 1878.

SUMMER SESSION.

SUBJECTS.	UNIVERSITY OF EDINBURGH.	SCHOOL OF MEDICINE, EDINBURGH.	UNIVERSITY OF GLASGOW.	ANDERSON'S COLLEGE, GLASGOW.	GLASGOW ROYAL INFIRMARY SCHOOL OF MEDICINE.	UNIVERSITY OF ABERDEEN.
Practical Anatomy and Demonstrations.	Professor Turner.	Dr Handyside.	...	Dr A. M. Buchanan.	Mr H.E. Clark.	Professor Struthers.
Botany.	Professor Balfour.	...	Professor A. Dickson.	...	...	Professor J. M. Trail.
Materia Medica.	...	Drs Moinet and Craig.	Professor Cowan and Dr Tennant.	...	...	Professor Harvey.
Midwifery.	...	Drs Keiller,* Macdonald, and Underhill.	...	Dr J.G. Wilson.	Dr James Stirton.	...
Medical Jurisprudence.	Professor MacLagan.†	Dr Littlejohn.‡	Professor Simpson.	Dr Alexander Lindsay.	Dr William Macewen.	Professor Ogston.†
Comparative Anatomy.	Professor Turner.	Dr Handyside	...	...	...	Prof. Nicol.
Practical Physiology, including Histology	Professor Rutherford.	...	Professor M'Kendrick.	Dr M'Vail.	Mr W. J. Fleming.	Professor Stirling.
Practical Pathology, including Histology.	Professor Sanders.	Dr Wyllie.	Dr Joseph Coats	...	Dr D. Foulis.	Dr Rodger.
Practical Chemistry.	Professor Crum Brown.	Drs Macadam and King.	Professor J. Ferguson.	Professor Dittmar.	Dr John Clark.	Prof. Brazier.
Operative Surgery.	...	...	...	...	Dr H. C. Cameron.	...
Pathology.	...	...	...	...	Dr D. Foulis.	...
Mental Diseases.	...	...	...	...	Dr Alex. Robertson.	...
Natural History.	Professor Sir Wyville Thomson.	Dr A. Wilson.	Professor Young.	...	...	Prof. Nicol.
Clinical Medicine.	Professors MacLagan and Sanders.	Drs Haldane,† Balfour, and Muirhead.	The Physicians of the Western and Royal Infirmaries.		The Physicians of the Infirmary.	Drs Smith-Shand, Beveridge, and Fraser.
Clinical Surgery.	...	Dr Watson.* Mr Annandale.	The Surgeons of the Western and Royal Infirmaries.		The Surgeons of the Infirmary.	Drs Pirrie, Ogston, and O. Will.

Operative Surgery is taught during the Summer by Messrs Bell and Chiene and Dr Duncan. Instruction in Vaccination is also given at the Royal Public Dispensary, Edinburgh, on Wednesdays and Saturdays at 12, both Summer and Winter, by Dr Husband; at the Faculty Hall, Glasgow, on Mondays at 12, by Dr Dunlop; and at the Royal Infirmary, Glasgow, on Mondays and Thursdays at 12 o'clock, by Dr Tannahill. Medical Psychology and Insanity are taught in Summer by Dr Grainger Stewart and Dr J. B. Tuke; the Diseases of Children by Dr Peel Ritchie; and the Diseases of the Eye by Dr Argyll Robertson.

* These are not conjoint courses, but separate ones by the gentlemen named.

† Dr Ogston delivers his courses only in Winter. Dr Littlejohn gives courses during both the Winter and Summer Sessions. Dr MacLagan also lectures during both Summer and Winter. The Winter Course is chiefly intended for law students, but is open to medical students also.

‡ This is a joint course.

. For additional Summer Courses on special subjects, see the Prospectus of each School.

LIST OF HOSPITALS, DISPENSARIES, ETC., IN CONNEXION WITH THE MEDICAL SCHOOLS OF SCOTLAND.

EDINBURGH.

ROYAL INFIRMARY, including **LOCK HOSPITAL**. Upwards of 560 Beds. Visits daily from 12 till 2 P.M. Physicians—Drs Maclagan, Sanders, and Grainger Stewart, Professors of Clinical Medicine; Professor Simpson (for Diseases of Women); Drs D. R. Haldane, G. W. Balfour, and Cland Muirhead, Clinical Lecturers. Assistant Physicians—Drs Brakenridge and Wyllie. Pathologist, Dr John Wyllie.

Surgeons—Professor Spence; Dr P. H. Watson; Mr Annandale; and Mr Joseph Bell. Assistant Surgeons, Dr John Duncan and Mr Chiene. Consulting Surgeons, Dr Dunsmure and Dr Gillespie. Ophthalmic Surgeons, Mr Walker and Dr Argyll Robertson. Dental Surgeon, Dr John Smith.

CONVALESCENT HOUSE, Corstorphine. Visiting Medical Officer, Mr Chiene.

CHALMERS HOSPITAL FOR THE SICK AND HURT. 24 Beds for medical and surgical patients. Physician, Dr Halliday Douglas. Surgeon, Dr P. H. Watson.

ROYAL MATERNITY HOSPITAL. 36 Beds; about 250 in-patients and 350 out-patients yearly. Consulting Physicians, Drs Moir and Graham Weir. Physicians, Drs Keiller, Ziegler, and Professor Simpson. Consulting Surgeon, Dr Dunsmure.

ROYAL HOSPITAL FOR SICK CHILDREN. 60 Beds; average number of out-patients, about 5600. Consulting Physicians, Sir Robert Christison, Dr C. Wilson, and Dr Graham Weir. Consulting Surgeon, Professor Spence. Physicians, Drs R. Peel Ritchie, J. Linton, J. Dunsmure, jun., and Macdonald. Extra Physicians, Drs J. Andrew and J. Cumming. Surgeon-Dentist, Dr Smith. Pathologist, Professor Sanders. Ophthalmic Surgeon, Dr Argyll Robertson.

ROYAL PUBLIC DISPENSARY AND VACCINE INSTITUTION. About 12,700 patients annually. Medical Officers, Professors Sanders and Spence, Drs Ritchie, Linton, Husband, Andrew, D. Wilson, Moinet, Alex. Sinclair, Gordon, and Playfair. Physician-Accoucheurs, Drs Keiller, Wilson, and Andrew. Superintendent of Vaccination, Dr Husband. Medical Secretary, Dr Andrew. Clinique daily at 2 P.M. Vaccination on Wednesdays and Saturdays at 12 noon. Apothecary, Mr R. Urquhart.

NEW TOWN DISPENSARY. About 10,000 patients annually. Medical Officers, Drs Cunynghame, Affleck, Cadell, Dunsmure, Wyllie, Underhill, Cumming, Ritchie, and Carmichael. Physician-Accoucheur, Dr Angus Macdonald. Superintendent of Vaccination, Dr Affleck. Clinique daily at 2 P.M. Vaccination on Tuesdays and Fridays from 12 to 1.

ROYAL ASYLUM FOR THE INSANE. About 660 patients. Physician, Dr Clouston.

EYE INFIRMARY, 6 Cambridge Street, Lothian Road. Surgeons, Benjamin Bell, Esq., F.R.C.S., and Joseph Bell, F.R.C.S. Assistant Surgeon, Dr J. Kirk Duncan. Open daily at 1 P.M. Average number of patients annually, 900.

EYE DISPENSARY, 54 Cockburn Street. About 2000 patients annually. Surgeons, Mr Walker, Dr Wilson, and Dr Argyll Robertson. Open Mondays, Wednesdays, and Fridays, at 1 P.M. Clinical instruction during the summer session.

EAR DISPENSARY OF EDINBURGH, 17 Thistle Street. Drs T. Keith and Blair Cunynghame, and Mr Chiene. Open Tuesdays at 11.

EAR DISPENSARY, 6 Cambridge Street, Lothian Road. Surgeon, Dr J. Kirk Duncan. Open Mondays and Thursdays, from 12 to 1 o'clock.

DENTAL DISPENSARY, 38 Cockburn Street. Consulting Surgeon, Professor Spence. Consulting Physician, Dr Sanders. Dental Surgeons, Dr Roberts, Mr Knox Chisholm, Mr Swanson, W. Chisholm, A. Cormack, and John Wight. Daily, 9 to 10 A.M. Average number of patients, 4000 per annum.

GLASGOW.

ROYAL INFIRMARY. 570 Beds. Visits daily at 9 A.M. Physicians, Drs M. Charteris, Maclaren, Scott Orr, Wood Smith, and Perry.

Surgeons, Drs Cameron, Morton, Watson, Macewen, and Dunlop. Dispensary Physicians, Drs Mather and Lawrie. Extra Dispensary Physicians, Drs J. W. Anderson, John Weir, and John Dougall. Dispensary Surgeons, Mr Clark and Dr Lothian. Extra Dispensary Surgeons, Dr Whitson, W. J. Fleming, M.B., and Dr Foulis. Vaccinator, Robert Tannahill, M.D. M. Thomas, M.D., Superintendent.

WESTERN INFIRMARY. This Hospital contains 200 Beds for Medical and Surgical patients, with Wards for Skin Diseases and Diseases of Women. Physicians, W. T. Gardiner, M.D., T. McCall Anderson, M.D., James Finlayson, M.D. Diseases of Women, W. Leishman, M.D. Surgeons, George H. B. Macleod, M.D., George Buchanan, M.D., A. Patterson, M.D. Dispensary Physicians, Gavin P. Tennent, M.D., Joseph Coats, M.D., D. C. McVail, M.B. Dispensary Surgeons, James G. Lyon, M.D., D. N. Knox, M.D., James Christie, M.D. Extra Dispensary Physician, S. Gemmell, M.B. Extra Dispensary Surgeon, J. C. Renton, M.D. Pathologist, Joseph Coats, M.D. Medical Superintendent, John Alexander, M.D. Lady Superintendent, Miss E. Clyde. The hour of visit is 9 A.M. Operating days, Wednesday and Saturday. Clinical lectures are given on Tuesdays and Fridays. The Dispensary for out-patients is open daily at 2 P.M.

LOCK HOSPITAL. 81 Beds. Medical Officers, Drs James Dunlop and A. Paterson. In-patients, 456.

LYING-IN HOSPITAL AND DISPENSARY. 24 Beds; in-patients, 293; out-patients, 937. Consulting Surgeon, Dr George Buchanan. Consulting Physician, Dr J. G. Wilson. Physician-Accoucheurs, Drs R. D. Tannahill and Hugh Miller. Assistant Physicians-Accoucheurs, Dr Samuel Sloan and J. W. Anderson. Out-door Physicians, Drs R. T. Paton, R. S. Wallace, W. L. Reid, and Alexander Miller.

ROYAL ASYLUM FOR THE INSANE. About 550 patients. Physician-Superintendent, Dr David Yellowlees. Lectures on Mental Diseases during summer, alternately at the University and the Asylum.

EYE INFIRMARY. 75 Beds; 508 in-patients; 5032 out-patients annually. Consulting Surgeon, George Buchanan, M.D. Surgeons, Thomas Reid, M.D., and Thomas S. Meighan, M.D. Assistant Surgeons, Henry E. Clark, M.R.C.S., J. Crawford Renton, M.B., D. N. Knox, M.B.

DISPENSARY FOR SKIN DISEASES, 63 John Street, Glasgow. Physician, Professor McCall Anderson. Open Mondays and Thursdays at 4 P.M., for out-door patients. This Institution is in connection with the Wards for Skin Diseases, in the Western Infirmary, to which the more important cases are sent.

OPHTHALMIC INSTITUTION. Consulting Physician, Dr J. R. Dickson. Surgeon, Dr J. R. Wolfe. Acting Physician, Dr Robert Bell. Assistant-Surgeon, Wm. Pickering, M.B. Open daily from 1 to 3 P.M. A Course of Lectures and Clinical Instruction during the winter and summer months.

GLASGOW DISPENSARY FOR DISEASES OF THE EAR, 241 Buchanan Street. During the Summer Session a Course of Practical Instruction in the Treatment of Ear Disease is given to the Students attending the Clinique. Average number of cases treated, 800 annually. Surgeon, James Patterson Cassells, M.D., M.R.C.S. Lond.

The **HUNTERIAN MUSEUM** is open to Students of Medicine, for purposes of study, on presenting their matriculation tickets.

ABERDEEN.

ROYAL INFIRMARY. Upwards of 300 Beds. Visits daily at 12 o'clock. Physicians, Drs Smith-Shand, Beveridge, and Fraser.

Surgeons, Drs Pirrie, A. Ogston, Will, and Garden. Ophthalmic Surgeon, Dr Davidson. Pathologist, Dr Rodger. Dental Surgeon, Mr Williamson.

GENERAL DISPENSARY, LYING-IN AND VACCINE INSTITUTION. 7000 patients annually. Open daily.

CHILDREN'S HOSPITAL. Physicians, Drs Stevenson and Garden. Clinical instruction daily at 11 o'clock.

LUNATIC ASYLUM. Above 300 patients.

EYE INSTITUTION, General Dispensary Buildings, Guestrow. Open three days in the week at 2.30 P.M. Clinical Instruction on Diseases of the Eye and the use of the Ophthalmoscope. Average, 600 patients annually.

ARMY MEDICAL DEPARTMENT.

6 WHITEHALL YARD, S.W.

SCHEDULE OF QUALIFICATIONS NECESSARY FOR CANDIDATES DESIROUS OF OBTAINING COMMISSIONS IN THE ARMY MEDICAL DEPARTMENT, WITH EXTRACTS FROM THE REGULATIONS PRESCRIBED BY THE ROYAL WARRANT OF THE 28TH APRIL 1876 (CLAUSE 58, ARMY CIRCULARS, 1876), BY WHICH THE PAY, PROMOTION, AND RETIREMENT OF MEDICAL OFFICERS ARE REGULATED AND DETERMINED.

1. Every candidate desirous of presenting himself to compete for a commission in the Army Medical Department must be 21 years of age and not over 32 years at the date of commencement of the competitive examination. He must produce an extract from the Register of his birth, or, in default, a declaration, made before a magistrate by one of his parents or guardians, giving his exact age. He must also produce a recommendation from some person of standing in society—not a member of his own family—to the effect that he is of regular and steady habits, and likely in *every* respect to prove creditable to the Department if a commission be granted; and also a certificate of moral character from the parochial clergyman, if possible.

2. The candidate must sign a declaration upon honour that both his parents are of unmixed European blood, and that he labours under no mental or constitutional disease, nor has any hereditary tendency thereto, nor any imperfection or disability that can interfere with the efficient discharge of the duties of a medical officer in any climate: also that he does not hold, and has never held, any commission or appointment in the public services. His physical fitness will be determined by a Board of Medical Officers, who are required to certify that the candidate's vision is sufficiently good to enable him to perform any surgical operation without the aid of glasses. A moderate degree of myopia will not be considered a disqualification, provided it does not necessitate the use of glasses during the performance of operations, and that no organic disease of the eyes exists. The Board must also certify that he is free from organic or other disease, and from constitutional weakness, or tendency thereto, or other disability of any kind likely to unfit him for military service in any climate.

3. Certificates of age, registration of diplomas, etc., and of character, must accompany the declaration when signed and returned.

4. Candidates will be examined by the Examining Board in the following compulsory subjects, and the highest number of marks attainable will be distributed as follows:—*a*. Anatomy and Physiology, 1000; *b*. Surgery, 1000;

c. Medicine, including Therapeutics, the Diseases of Women and Children, 1000; d. Chemistry and Pharmacy, and a practical knowledge of drugs, 100. [N.B.—The examination in Medicine and Surgery will be in part practical, and will include operations on the dead body, the application of surgical apparatus, and the examination of Medical and Surgical patients at the bedside.] The eligibility of each candidate for the Army Medical Service will be determined by the result of the examinations in these subjects only. Examinations will also be held in the following voluntary subjects, for which the maximum number of marks will be—French and German (150 each), 300; Natural Sciences, 300. The knowledge of Modern Languages being considered of great importance, all intending competitors are urged to qualify in French and German. The Natural Sciences will include Comparative Anatomy, Zoology, Natural Philosophy, Physical Geography, and Botany, with special reference to *Materia Medica*. The number of marks gained in both the voluntary subjects will be added to the total number of marks obtained by those who shall have been found qualified for admission, and whose position on the list of successful competitors will thus be improved in proportion to their knowledge of modern languages and natural sciences.

5. After passing this examination, every candidate will be required to attend one entire course of practical instruction at the Army Medical School on—(1) Hygiene; (2) Clinical and Military Medicine; (3) Clinical and Military Surgery; (4) Pathology of Diseases and Injuries incident to Military Service.

The following Extracts from the Royal Warrant of 28th April 1876 (Clause 58, Army Circulars, 1876) are republished for the information of Candidates for Commissions in the Army Medical Department.

1. The daily rates of pay of the officers of the Army Medical Department shall be as follows:—Surgeon-General £2, after twenty-five years' service £2, 5s., after thirty years' service £2, 7s., after thirty-five years' service £2, 10s.; Deputy Surgeon-General £1, 10s., after twenty-five years' service £1, 12s., after thirty years' service £1, 15s., after thirty-five years' service £1, 17s.; Surgeon-Major, on appointment £1, after five years' service as such £1, 5s.; Surgeon, on appointment £250 a year, after ten years' service 17s. 6d. daily. Charge pay: the principal medical officer of an army in the field, consisting of 10,000 men and upwards, £1 daily; of 5000 men and upwards, 15s. daily; of less than 5000, 10s. daily. Or, the principal medical officer of a colony where the number of commissioned officers and enlisted men is 1500 and upwards, 5s. daily.

2. The pay of officers shall be issued monthly in arrear.

3. The relative rank of the officers of the Army Medical Department shall be as follows:—I. A Surgeon-General shall rank as Major-General, according to the date of his commission. II. A Deputy Surgeon-General shall rank as Colonel, according to the date of his commission. III. A Surgeon-Major shall rank as Major, according to the date of his commission; after twenty years' full-pay service as Surgeon and Surgeon-Major, he shall rank as Lieutenant-Colonel, but junior of the latter rank. IV. A Surgeon shall rank as Lieutenant, according to the date of his commission; and, after six years' full-pay service, as Captain according to the date of the completion of such service.

4. The relative rank of these officers shall regulate choice of quarters, rates of lodging-money, servants, fuel and light, or allowances in their stead, detention and prize-money, as well as allowances granted on account of wounds or injuries received in action, and pensions and allowances to widows and families.

5. Forage shall be granted to officers of the Army Medical Department for such number of horses as are necessarily kept by them for duty.

6. Admission to the Army Medical Department shall be by public competition.

7. Every candidate for appointment to the Army Medical Department shall possess two Diplomas or Licences, one to practise Medicine and the other Surgery in Great Britain or Ireland, and be registered under the Medical Act in force at the time of his appointment.

8. A successful candidate, who, having passed through a course of instruction at the Army Medical School at Netley, in Military Medicine, Surgery, Hygiene, and Pathology, shall have proved, after examination, that he possesses a competent knowledge of those subjects, shall receive a commission as Surgeon for a limited period of ten years' service on full pay. From the date of joining at Netley, and up to that of passing his final examination, a candidate shall receive 5s. a day.

9. On the completion of ten years' commissioned service, unless the Surgeon be specially selected for further employment in the Medical Department of our Army, or, if he be unwilling to continue to serve therein, his services shall be dispensed with, and he shall be entitled to receive, in lieu of all pension or retirement, pension for wounds excepted, the sum of one thousand pounds.

10. A Surgeon of less than ten years' service, disqualified for duty by ill-health, certified by a Board of Medical Officers to have been contracted in and by the Service, may, at the discretion of our Secretary of State for War, be granted half-pay at a rate not exceeding 8s. a day if he have served five years or more, or 6s. a day if he have served less than five years, for a period not exceeding six months at one time.

11. At the expiration of that period of six months, if the Surgeon be able to resume his duties, he shall be entitled to complete his term of ten years' service. If he be unable to resume duty, as certified by a Board of Medical Officers, he shall be allowed, if he have not served five years, a further period of six months, without half-pay; at the expiration of which period, if still unable to resume duty, his services shall be dispensed with.

12. If the Surgeon have served five years on full-pay, and be unable to resume duty as certified by a Board of Medical Officers, his services shall be dispensed with, and he shall be entitled to receive, in lieu of all further pension or pay, pension for wounds excepted, a gratuity at one of the following rates, viz.:—If he shall have completed nine years' full-pay service, £800; if he shall have completed eight years' full-pay service, £700; if he shall have completed seven years' full-pay service, £600; if he shall have completed six years' full-pay service, £500; if he shall have completed five years' full-pay service, £400.

13. If a Surgeon be unable to complete his ten years' service from any cause other than wounds or ill-health, certified by a Board of Medical Officers to have been caused in and by the Service, or reduction of establishment, he shall be allowed not more than six months' leave without pay, after which, if unable to resume duty, his services shall be at once dispensed with, and he shall have no further claim on the Department.

14. If the services of an Officer be temporarily dispensed with in consequence of a reduction of establishment, he shall be granted the rates of half-pay fixed by Article 10 until there be an opportunity of re-employing him, or, if he have served five years, he may retire from the Service with a gratuity according to the rates specified in Article 12.

15. Every year it shall be competent for our Commander-in-Chief, on the recommendation of the Director-General of the Army Medical Department, to select, with the approval of our Secretary of State, a number of Surgeons not exceeding six, who shall be retained in the Service, and shall be promoted after twelve years' service on full-pay to the rank of Surgeon-Major.

16. All promotion from the rank of Surgeon-Major to that of Deputy Surgeon-General, and from the rank of Deputy Surgeon-General to that of Surgeon-General, shall be given for ability and merit upon the selection of our Commander-in-Chief, with the approval of our Secretary of State; and the grounds of such selection shall be stated to us in writing, and recorded in the Department. In all such cases the amount of foreign service shall be expressly stated.

17. A medical officer retiring after full-pay service of twenty-five years and upwards, may, if recommended for the same by the head of his Department, receive a step of honorary rank, but without any consequent increase of half-pay.

18. Good Service Pensions shall be awarded to the most meritorious officers of the Army Medical Department, under such regulations as shall be from time to time determined by us, with the advice of our Secretary of State.

19. Six of the most meritorious officers of the Army Medical Department shall be named our Honorary Physicians, and six our Honorary Surgeons.

20. Medical officers shall have a right to retire on half-pay after twenty years' service. Medical officers of the rank of Surgeon-Major or Surgeon shall be placed on the retired list at the age of fifty-five, and all Surgeons-General and Deputy Surgeons-General at the age of sixty years.

21. Our Secretary of State may, when he shall deem it fit, employ medical officers on the half-pay list in special situations at such rates of pay, in addition to half-pay, as he shall from time to time determine; but such officers shall vacate their appointments on attaining the age of sixty-five years.

22. A medical officer who, having voluntarily resigned his commission, has subsequently been permitted to re-enter the Department, shall not, except under very special circumstances to be approved by our Secretary of State, be allowed to reckon his former service.

Service on the West Coast of Africa.

23. Services of medical officers upon the West Coast of Africa shall be voluntary.

24. Each year or portion of a year shall be allowed to reckon double towards retirement or towards the gratuities fixed by Articles 9 and 12, but not towards increased pay, provided that the officer shall serve at least twelve months on the West Coast of Africa.

25. For each year's service on the Coast, a medical officer shall be entitled to a year's leave at home, and for every additional period beyond a year he shall have an equivalent extension of leave.

26. Officers who may volunteer for service on the West Coast of Africa shall receive double pay while actually serving on the Coast.

Non-Effective Pay.

27. A medical officer of more than ten years' service placed on half-pay by reduction of establishment, or on the report of a Medical Board in consequence of wounds or ill-health, caused in and by the discharge of his duties, or on account of age (under Article 20), shall be entitled to half-pay in accordance with the following daily rates:—Surgeon-General, after thirty years' service, £1, 17s. 6d.; twenty-five years, £1, 13s. 6d.; twenty years, £1, 10s. Deputy Surgeon-General, after thirty years, £1, 5s. 6d.; twenty-five years, £1, 2s. 6d.; twenty years, £1, 1s. Surgeon-Major, after twenty-five years, £1; twenty years, 16s. 6d.; fifteen years, 13s. 6d.; twelve years, 11s. Surgeons, after ten years, 10s.

28. The rate of half-pay awarded to officers retiring for their own convenience, after twenty years' service on full-pay, under Article 20, shall not exceed one-half of their full-pay at the time of retirement.

29. Every medical officer who shall retire after a service upon full-pay of twenty-five years, shall be granted a rate of half-pay equal to seven-tenths of the daily pay he may have been in receipt of when thus retiring on half-pay, provided he shall have served three years in his rank, or shall have served abroad for ten years in all ranks, or for five years with an army in the field. An officer of twenty-five years' full-pay service, whose service falls within neither of these conditions, shall be entitled to only seven-tenths of the daily pay he was in receipt of prior to his last promotion.

30. Medical officers of twenty years' full-pay service, placed temporarily on half-pay on account of ill-health, may, however, be allowed to retire on permanent half-pay at the rate fixed by Article 27, if after one year on half-pay he shall be reported by a Medical Board to be permanently unfit for further service.

31. In all matters not specially provided for in our present Warrant, the Officers of the Medical Department of our Army shall be subject to the General Regulations for the Departments of our Army. [*N.B.*—The rates of pay, including allowances, while serving in India, will range from 317 rupees (£31, 14s.) to 433 rupees (£43, 6s.) per month, according to length of service.

ARMY MEDICAL SCHOOL.

ROYAL VICTORIA HOSPITAL, NETLEY.

President of the Senate.—Sir William M. Muir, K.C.B., M.D., Director-General of the Army Medical Department.

Members of the Senate.—Sir J. Fayrer, M.D., K.C.S.I., F.R.S., Physician to the Indian Council; Sir Alexander Armstrong, M.D., K.C.B., F.R.S., Director-General Naval Medical Department; The Principal Medical Officer, Royal Victoria Hospital; Surgeon-General T. Longmore, C.B., Professor of Military Surgery; Surgeon-General W. C. Maclean, C.B., Professor of Military Medicine; William Aitken, M.D., F.R.S., Professor of Pathology; F. S. B. F. De Chaumont, M.D., F.R.C.S.E., Surgeon-Major, Professor of Military Hygiene; J. D. Macdonald, M.D., F.R.S., R.N., Professor of Naval Hygiene.

Assistant Professors.—Surgeon-Majors J. H. Porter, W. M. Webb, and F. H. Welch, F.R.C.S.I.

Candidates for Commissions in the Army, Navy, and in the Queen's Indian Service, proceed to Netley after passing the Examination at London. At Netley they attend the Medical and Surgical Practice of the Royal Victoria Hospital, and learn the system and arrangements of Military Hospitals. During four months they attend the lectures given by the Professors and Assistant-Professors, and go through a course of practical instruction in the Hygienic Laboratory and Microscopical Room. The lectures and practical instruction are intended to explain the specialities of Military Medical Practice, attention being directed to gunshot and other wounds, surgical arrangements in the field during action and sieges, means of transport, field hospitals, tropical diseases and their means of investigation, service in India and in the various colonies, the sanitary arrangements in peace and war, and the means of carrying out the sanitary regulations. Every opportunity is taken of practising operations on the dead body, and practical points of a like kind.

INDIAN MEDICAL SERVICE.

MEMORANDUM REGARDING THE POSITION OF MEDICAL OFFICERS TO BE APPOINTED TO HER MAJESTY'S INDIAN FORCES.

India Office, March 1877.

1. The regulations are those in force at the present time. They are subject to any alteration that may be determined on.

2. *Passage to India.*—Passage allowance to India on appointment will be given, or a passage provided. When passages are provided on board the Indian troop-ships, a charge for messing will be made at the rate laid down in the Royal Passage Warrant of 1865—viz., 3s. 6d. a day; but, when wine and beer are not included in the mess, and it is so stated on the messing certificate, the daily contribution required will be 2s. 6d. only.

3. All Surgeons who shall neglect or refuse to proceed to India under the orders of the Secretary of State for India within two months from the date of leaving Netley, will be considered as having forfeited their appointment, unless special circumstances shall justify a departure from this regulation.

4. *Pay previous to Embarkation.*—Pay at the rate of 10s. a day will be allowed from date of passing final examination at the Army Medical School, until date of embarkation when a passage is provided, or for a period of two

months when the Surgeon is permitted to make his own arrangements for passage. An advance of two months' pay will also be made on embarkation.

5. *Grades and Relative Rank.*—The grades of Medical Officers in the Indian Military Forces are four in number, viz. :—

1. Surgeon-General, ranking as Major-General, according to the date of his commission.
2. Deputy Surgeon-General, as Colonel according to the date of his commission.
3. Surgeon-Major, as Major according to the date of his commission ; and after twenty years' service as Surgeon and Surgeon-Major, as Lieutenant-Colonel, but junior of that rank except for choice of quarters.
4. Surgeon, as Lieutenant according to the date of his commission ; and after six years' service as Captain according to the date of the completion of such service.

6. *Promotion.*—A Surgeon is promoted to Surgeon-Major on completion of twelve years' service from date of first commission, subject to his passing the prescribed examination.

7. In cases, however, of emergency, or when the good of the service renders such alteration desirable, it is competent for the Secretary of State for India, on the recommendation of the Viceroy and Governor-General of India in Council, to shorten the period of service above mentioned, in such manner as he shall deem fit and expedient.

8. The examination for promotion may be taken at any time after the Surgeon has served nine or more years.

9. When Surgeons have served the requisite time, they will be examined in the following manner :—

A series of printed questions prepared by an examining board, consisting of the Principal of the Medical College and any two or more of the professors he may associate with himself for the purpose, will be sealed and sent by the Surgeon-General to the principal medical officers of stations where Surgeons may be eligible for examination. It will be the duty of the principal medical officer of the station to deliver the sealed questions to the Surgeons, and to see that they are answered without the assistance of books, notes, or communication with any other person. The answers are to be signed and delivered, sealed, to the Principal Medical Officer, who is to send them, unopened, to the Surgeon-General, together with a declaration from the Surgeon himself, or certificate from a superior medical officer, if there is one, that he has availed himself of every opportunity of practising surgical operations on the dead body.¹

10. The Surgeon is also required to transmit, together with his answers to the Surgeon-General, a medico-topographical account of the station where he may happen to be at the time, or of some other station where he may have been resident sufficiently long to enable him to collect the necessary information for such a report. Failing this, he will send a medico-statistical report of his charge for a period of at least twelve months.

11. If the examining board is satisfied with the replies to the questions, and the Surgeon-General is satisfied with the certificates and with the medico-topographical or statistical report, the Surgeon will be held qualified for promotion.

12. All promotion from the rank of Surgeon-Major to that of Deputy Surgeon-General, and from the rank of Deputy Surgeon-General to that of Surgeon-General, is given by selection for ability and merit.

13. *Tenure of Office in Administrative Grades.*—The tenure of office of Surgeons-General and Deputy Surgeons-General is limited to five years.

14. Deputy Surgeons-General, if not disqualified by age, are eligible either for employment for a second tour of duty in the same grade, or for employment in the higher grade of Surgeon-General by promotion thereto.

15. Absence on leave in excess of six months on medical certificate, or of four months on private affairs, involves forfeiture of appointment.

¹ The Surgeon may see this certificate before it is sent to the Surgeon-General.

16. *Pay and Allowances when in India.*—Officers who may hereafter be appointed to the Indian Medical Service will receive pay in India according to the following scale:—

Rank.	Years' Service.	Pay and Allowances per Mensem.		
		R.	A.	P.
Surgeon-Major . . .	25	888	12	0
" . . .	20	852	3	7
" . . .	15	677	6	11
" . . .	12	640	14	6
Surgeon . . .	10	410	9	5
" . . .	6	392	5	2
" . . .	5	304	14	2
" . . .	under 5	286	10	0

17. On first appointment they will only come into receipt of Indian pay and allowances from the date of their arrival within the limits of the Presidency to which they have been gazetted. When provided with passages on the troop-ships they draw Indian pay and allowances from date of disembarkation at Bombay.

18. The monthly salaries of the principal administrative and military appointments are fixed at the following consolidated sums:—Surgeon-General, Bengal, Rs. 2700; Madras, Rs. 2500; Bombay, Rs. 2500; Deputy Surgeon-General, Rs. 1800; Surgeon-Major, of twenty years' service and upwards, in charge of Native regiments, Rs. 1000, with Rs. 90 horse allowance in Cavalry regiments; Surgeon-Major in charge of Native regiments, Rs. 800, with Rs. 90 horse allowance in Cavalry regiments; Surgeon, above five years' full-pay service, in charge of Native regiments, Rs. 600, with Rs. 60 horse allowance in Cavalry regiments; Surgeon, under five years' full pay service, in charge of Native regiments, Rs. 450, with Rs. 60 horse allowance in Cavalry regiments.

19. The salaries of other medical appointments in the Civil and Military Departments are consolidated, and vary from Rs. 1800 to Rs. 400 per mensem.

20. Qualified officers of the Medical Service are also eligible for appointments in the Assay Department. The salaries of these appointments are from Rs. 600 to Rs. 2250 per mensem.

21. A medical officer will, however employed, be restricted to the rate of pay laid down in para. 16, until he shall have passed the examination in Hindustani, known as the "Lower Standard."

22. Surgeons-General and Deputy Surgeons-General, on vacating office at the expiration of the five years' tour of duty, will be permitted to draw *in India* respectively an unemployed salary of Rs. 1200 per mensem in the former, and Rs. 900 in the latter case, for a period of six months from the date of their vacating office, after which they will be placed while unemployed on the following scale of pay:—Surgeon-General, after thirty years' service on full-pay, £2, 5s.; after twenty-five years' service on full-pay, £2, 5s.; after twenty years' service on full-pay, or on promotion should this period of service not be completed, £2; Deputy Surgeon-General, after thirty years' service on full-pay, £1, 14s.; after twenty-five years' service on full-pay, £1, 10s.; after twenty years' service on full-pay, or on promotion should this period of service not be completed, £1, 8s.

23. *Furloughs.*—An officer will be eligible for one year's furlough on the completion of five years' actual service in India, and for an additional year after each subsequent five years' service.

24. While on furlough an officer will receive half the emolument of his office.

25. No absentee shall draw more than £1000 or less than £250 per annum.

26. Upon certificate of a Medical Board, an officer not entitled to furlough,

if he has served not less than two years in India, may receive it for any period not exceeding two years.

27. Surgeons under six years' service, and in receipt of Indian allowances as subalterns, on returning to England on sick certificate receive passage allowance.

28. Officers of the Administrative Grade are entitled during their tenure of appointment to six months' leave of absence on sick certificate, or four months' leave on private affairs.

29. *Retiring Pensions*.—Officers of the Indian Medical Service will be allowed to retire on the following scale of pension, on completion of the required periods of service:—After thirty years' service in India, £550; after twenty-seven years' service in India, £456; after twenty-four years' service in India, £365; after twenty-one years' service in India, £292; after seventeen years' service in India, £220.

30. Time of service for pension will reckon from date of arrival in India. The period of residence at the Army Medical School will reckon as service for the above pension, except in the cases of officers who have gone through the course at Netley as candidates for the British Army or Navy Medical Service.

31. A Surgeon-General after five years' active employment in India in that grade, will be entitled to retire upon a pension of £350 per annum, in addition to that to which he may be entitled under the above scale.

32. A Deputy Surgeon-General will, after five years' active employment in India in that grade, be entitled to retire upon a pension of £250 per annum, in addition to the pension to which he may be entitled under the above scale.

33. In each of the above cases stated in paras. 31 and 32, six months' absence on medical certificate will be allowed to count towards actual service in those grades.

34. A Surgeon-General or Deputy Surgeon-General who has completed his term of service and has reverted to British pay, may reside in Europe, at the same time qualifying for higher pension.

35. With a view to maintain the efficiency of the service, all medical officers of the rank of Surgeon-Major shall be placed on the Retired List when they shall have attained the age of fifty-five years, and all Surgeons-General and Deputy Surgeons-General when they shall have attained the age of sixty-five years. In any special case, where it would appear to be for the good of the service that the officer should continue in employment, he may be so continued, subject in each case to the sanction of the Secretary of State for India in Council.

36. A medical officer retiring after a service of twenty-five years and upwards may, if recommended for the same by the Government of his Presidency, receive a step of honorary rank, but without any consequent increase of pay.

37. Officers compelled to leave the service on account of ill-health, and not entitled to full-pay pension under present regulations, will be allowed the half-pay of their relative rank, as laid down in the Royal Warrant of 10th May 1873:—Surgeon-Major of twenty years' service, ranking with Lieutenant-Colonel, 11s. per day; Surgeon-Major, ranking with Major, 9s. 6d. per day; Surgeon, ranking with Captain, 7s. per day; Surgeon under six years' service, ranking with Lieutenant, 4s. per day; Surgeon under three years' service, ranking with Lieutenant, 2s. 6d. per day. Officers cannot retire *in India* on half-pay (No. 54, 28th February 1865).

38. *Wound Pensions*.—Medical officers are entitled to the same allowances granted to Her Majesty's Indian Military Forces on account of wounds and injuries received in action as combatant officers holding the same relative rank.

39. *Family Pensions*.—The claims to pension of widows and families of medical officers shall be treated under the provisions of such Royal Warrant regulating the grant of pensions to the widows and families of British officers as may be in force at the time being. (The Royal Warrant of 27th December 1870 is the one now in force.)

40. The widows and families of medical officers are also entitled to pensions from the Indian Service Family Pension Fund, to which all Surgeons must, as a condition of their appointment, subscribe from the date of their arrival in India.

NAVY MEDICAL DEPARTMENT.

Admiralty, 9 New Street, Spring Gardens, London, S. W.

REGULATIONS RELATIVE TO THE EXAMINATION OF CANDIDATES FOR
COMMISSIONS IN THE MEDICAL SERVICE OF THE ROYAL NAVY.

Candidates for admission to the Naval Medical Service must subscribe and send to the Medical Department, Admiralty, proofs of their qualifications, etc., similar to those required by the Army Medical Department. The regulations and subjects for examination are also similar.

After passing the examination, every candidate will be required to attend one entire course of practical instruction in the Medical School at Netley, on—(1) Hygiene; (2) Clinical and Naval and Military Medicine; (3) Clinical and Naval and Military Surgery; (4) Pathology of Diseases and Injuries incidental to Naval and Military Service.

At its conclusion, the candidate will be required to pass an examination on the subjects taught in the School. If he give satisfactory evidence of being qualified for the practical duties of a Naval Medical Officer, he will be eligible for a commission as Surgeon.

During the period of his residence at the Netley Medical School, each candidate will receive an allowance of 5s. per diem with quarters, or 7s. per diem without quarters, to cover all cost of maintenance; and he will be required to provide himself with uniform—viz., the regulation undress uniform of a Surgeon, but without the sword.

The full and half pay of Naval Medical Officers is in accordance with the following scale:—Full-pay: Inspector-General of Hospitals and Fleets—On promotion or under twenty-five years' service, £2, 5s.; ditto or above twenty-five years' service, £2, 6s.; and for each additional year of service 1s. a day more until the maximum is reached—namely, £2, 10s. Deputy Inspector-General of Hospitals and Fleets—On promotion or under twenty-two years' service, £1, 11s.; ditto or above twenty-two years' service, £1, 12s.; and for each additional year of service 1s. a day more until the maximum is reached—namely, £1, 18s. Fleet Surgeon—On promotion or under twenty years' service, £1, 3s.; ditto or above twenty years' service, £1, 4s.; and for each additional year of service 1s. a day more until the maximum is reached—namely, £1, 10s. Staff Surgeon—On promotion or under fourteen years' service, 18s.; ditto or under seventeen years' service, £1; and for each additional year of service 1s. a day more until the maximum is reached—namely, £1, 2s. Surgeon—Under five years' service, 11s.; under eight years' service, 12s. 6d.; under eleven years' service, 14s.; under fourteen years' service, provided he passed his examination for Staff Surgeon while under ten years' service, 15s. 6d.; above fourteen years' service, ditto, 17s. Half-pay: Surgeon—Under five years' service, 6s.; under eight years' service, 8s.; under eleven years' service, 10s.; above eleven years' service, provided he passed his examination for Staff Surgeon while under ten years' service, 11s. Staff Surgeon—On promotion or under fourteen years' service, 11s.; ditto or under seventeen years' service, 13s.; ditto or above seventeen years' service, 14s. Fleet Surgeon—On promotion or under twenty years' service, 16s.; ditto or above twenty years' service, 16s. 6d.; and for each additional year of service 6d. a day more until the maximum is reached—namely, 18s. 6d. Deputy Inspector-General of Hospitals and Fleets—On promotion or under twenty-two years' service, £1, 1s.; ditto or above twenty-two years' service, £1, 2s.; and for each additional year of service 1s. a day more until the maximum is reached—namely, £1, 7s. Inspector-General of Hospitals and Fleets—On promotion or under twenty-five years' service, £1, 11s.; ditto or above twenty five years' service, £1, 12s.; and for each additional year of service 1s. a day more until the maximum is reached—namely, £1, 18s.

PRELIMINARY EXAMINATIONS for the DIPLOMAS of the ROYAL COLLEGES of PHYSICIANS and SURGEONS of EDINBURGH, during the Year 1877-78.

I. The *Preliminary Examination in General Education* for the Double Qualification in Medicine and in Surgery conferred conjointly by the Royal Colleges of Physicians and Surgeons, and also for the separate Diploma of each College, for 1877-78, will embrace the following subjects:—

1. *English Language*, including Grammar and Composition.
2. *Arithmetic*, including Vulgar and Decimal Fractions.
3. *Algebra*, including Simple Equations.
4. *Geometry*; First Two Books of Euclid.
5. *Latin*; Horatii Carmina, Lib. I.; Salustii Jugurtha.
6. One of the following subjects at the option of the candidate: (1.) *Greek*; (2.) *French*; (3.) *German*; (4.) *Natural Philosophy*, including Mechanics, Hydrostatics, and Pneumatics.

II. In *Latin*, besides translation from one of the books prescribed, the examination will include grammar, translation of a passage from an unprescribed author, and translation of a passage from English into Latin, the more difficult words being supplied.

In *Greek*, the books prescribed are, Herodotus' History, Book I., and Homer's Iliad, Book II. Besides translation from both these, parsing, derivation of English words from Greek, and translation of a passage from English into Greek are required.

In *French*, the book prescribed is Molière, L'Avare. Parsing and translation from English into French are also required.

In *German*, the book prescribed is Schiller's Wilhelm Tell. Parsing and translation from English into German are also required.

Natural Philosophy, as defined above, corresponds to *Mechanics*, in the preliminary examination of the University of Edinburgh.

III. The examinations will be held on the following days, beginning each day at twelve o'clock:—Tuesday, 16th October, and Wednesday, 17th October, 1877; Tuesday, 16th April, and Wednesday, 17th April, 1878; and Saturday 20th July, and Monday, 22d July, 1878. On each occasion the subjects of the first day's examination will consist of English, Latin, and Geometry; and those of the second day, of Arithmetic, Algebra, and the optional subjects.

Candidates are required to give in their names to the officer of either College not less than two days prior to the day of examination.

Each candidate shall pay a fee of ten shillings previous to the examination. In the event of the candidate being unsuccessful, he shall be allowed to appear once again for examination without paying a fee but, for any number of times more than two on which he shall again appear, he will be charged a fee of Five Shillings on each occasion.

IV. The examinations will be conducted according to the following regulations:—

1. The competence of the candidate will be ascertained by means of written exercises. Candidates whose success amounts to a certain minimum will be admitted.

2. Each candidate must bring with him a card having his name, place of birth, and an address that will find him by post distinctly written on it.

3. The exercises on each of the subjects must, in every case, be written on separate papers; and the candidate must attach his signature and his address to each sheet of his written paper, and on the outside when folded, before giving it in to those who superintend the examination.

4. Books must not be employed, nor may assistance be given by one candidate to another, during the examination. Those who violate this necessary rule shall forfeit, although successful, the right to a certificate.

5. The decision of the examiners will be intimated to each candidate as soon as possible. Those who pass the examination will receive certificates to that

effect. In the case of those who are successful in part of the examination only, the subjects in which they have passed will be recorded, and they will not be again examined in the branch or branches in which they have been successful.

V. A certificate of having passed all the required subjects of the above examination, entitles the possessor to be registered as a Medical Student in the form required by the regulations of the General Medical Council, and, provided the candidate passes in three books of Euclid, is also admitted *pro tanto* by the Medical Faculty of the University of Edinburgh as an equivalent for the corresponding subjects of their preliminary examination for intending Graduates in Medicine.

A list of Examining Boards in the United Kingdom and in the Colonies, whose certificates are received by the Royal Colleges, on the recommendation of the General Medical Council, as equivalent to the above, will be found in the Appendix to the Regulations of the Colleges.

ALEX. KEILLER, *President Royal College of Physicians.*

H. D. LITTLEJOHN, *President Royal College of Surgeons.*

EDINBURGH, 1st June 1877.

Frequent inquiries having been made as to the exact nature of the Preliminary Examination for the Diplomas of the Royal Colleges of Physicians and Surgeons of Edinburgh, the Secretaries have supplied the following papers, which were given out at the examinations in 1876.

FIRST DAY.—COMPULSORY.

ENGLISH.

The candidate is required :—

1. To write a passage dictated by the examiner, with strict attention to spelling and punctuation.

2. To give the meaning and derivation of at least eight of the following words :—

Interest, Circumstance, Possibility, Demonstration, Disciple, Fidelity, Interposition, Infallible, Intelligence, Description, Unprofitable, Gradually.

3. To give a grammatical analysis of the following sentence :—

“So, of his gentleness,
Knowing I loved my books, he furnished me,
From my own library, with volumes that
I prize above my dukedom.”

4. To write a short essay on either of the two following subjects, viz. :—

“Boat racing,” or “International Exhibitions.”

[The essay need not exceed a folio page.]

GEOMETRY.

Euclid, Books 1 and 2.

1. The angles at the base of an isosceles triangle are equal, and if the equal sides be produced, the angles upon the other side of the base are equal.

2. To construct a triangle of which the sides shall be equal to three given straight lines.

Show where, in the construction, the demand is made that any two of these lines must be the greater than the third.

3. The complements of the parallelograms about the diagonal of any parallelogram are equal to one another.

Prove also any converse.

4. If a straight line be bisected and produced to any point, the rectangle contained by the whole line thus produced, and the part of it produced, together with the square of half the line bisected, is equal to the square of the line made up of the half and the part produced.

5. To divide a given straight line into two parts, so that the rectangle contained by the whole and one of the parts may be equal to the square of the other part.

If the line be 10 feet long, what are the parts?

Euclid, Book 3.

1. To find the centre of a given circle. Prove that the line which joins the middle points of two parallel chords passes through the centre of the circle.

2. If a straight line touch a circle, the straight line drawn from the centre to the point of contact is perpendicular to the line which touches the circle.

3. If from any point without a circle two straight lines be drawn, one of which cuts the circle, and the other touches it, the rectangle contained by the whole line which cuts the circle and the part of it without the circle, is equal to the square of the line which touches it.

LATIN.

I.

Translate:—

Caesar, etsi idem, quod superioribus diebus acciderat, fore videbat, ut, si essent hostes pulsi, celeritate periculum effugerent; tamen, nactus equites circiter xxx, quos Commius, Atrebas, de quo ante dictum est, secum transportaverat, legiones in acie pro castris constituit. Commisso proelio, diutius nostrorum militum impetum hostes ferre non potuerunt, ac terga verterunt: quos tanto spatio secuti, quantum cursu et viribus efficere potuerunt, complures ex iis occiderunt; deinde, omnibus longe lateque afflictis, incensisque, se in castra receperunt.

Parse *idem*. Parse *acciderat*. Parse *pulsi*. Parse *celeritate*; compare the adjective from which it is derived; also compare the adverb signifying swiftly. Parse *nactus*; give the third person singular of the imperfect indicative and imperfect subjunctive; also of the future present indicative and of the present subjunctive, and decline these tenses. Compare *longe* and *late*.

Numerical value, 50.

II.

O! mihi praeteritos referat si Jupiter annos;
Qualis eram, quum primam aciem Praeneste sub ipsa
Stravi, scutorumque incendi victor acervos,
Et regem hac Herilum dextra sub Tartara misi;
Nascenti cui tris animas Feronia mater,
Horrendum dictu! dederat, terna arma movenda;
Ter leto sternendus erat; cui tunc tamen omnis
Abstulit haec animas dextra, et totidem exuit armis:
Non ego nunc dulci amplexu divellerer usquam,
Nate, tuo; neque finitimus Mezentius usquam,
Huic capiti insultans, tot ferro saeva dedisset
Funera, tam multis viduasset civibus urbem.

Parse *referat*. Parse *stravi*; give the first person plural of the present indicative, of the pluperfect indicative, and of the imperfect subjunctive. Parse *dextra*; what word is understood after it? Parse *dederat*. Parse *divellerer*. Parse *viduasset*. Numerical value, 50.

III.—Passage from an unprescribed Author.

Neque tamen exercitus populi Romani laetam aut incruentam victoriam adeptus: nam strenuissimus quisque aut occiderat in proelio, aut graviter vulneratus discesserat. Multi autem, qui de castris visundi, aut spoliandi, gratia processerant, volentes hostilia cadavera, amicum alii, pars hospitem, aut cognatum, reperiebant: fuere item, qui inimicos suos cognoscerent. Ita varie per omnem exercitum laetitia, moeror, luctus atque gaudia agitabantur.

Parse *adeptus*. Parse *occiderat*. Parse *fuere item, qui inimicos suos cognoscerent*. Numerical value, 50.

IV.—*Render in correct Latin the following Passage :—*

When Titus one day recollected, at supper, that he had done nothing for any one that day, he said, O friends! to-day I have lost a day. He was a prince of so much easiness and generosity, that he denied no man anything; and when he was blamed for it by his friends, he replied, that no man ought to go away sorrowing from an emperor.

Cum Titus quidam dies recorder, in coena, sui nihil quisquam praesto ille dies, dico, O amicus! hodie dies perdo. Sum princeps tantus facilitas et liberalitas, ut nullus quisquam nego; et cum ab amicis reprehendo, respondeo, nullus tristis debeo ab imperator discedo.

Numerical value, 50.

In order to pass, the candidate must have done one or other, but not both, of Nos. I. and II. He must also have done Nos. III. and IV.; and must have obtained in all 100 marks.

SECOND DAY.—COMPULSORY.

ARITHMETIC.

1. £100 are laid out in purchasing articles at 17s. 6d. a dozen, which are afterwards sold at 35s. a score. Required the gain on the transaction.

2. Find the cost of 3 qrs. 17 lbs. 13 oz. at 6½d. per oz.

3. If 15½ yards cost 17½s., what is the cost of ¾ of a piece which measures 29½ yards?

4. Reduce the following to their simplest forms :

$$(1.) \frac{4}{7} + \frac{2}{21} + \frac{5}{6}.$$

$$(2.) \frac{4}{7} \times \frac{2}{21} \div \frac{5}{6}.$$

$$(4.) \left(\frac{4}{7} + \frac{2}{21} \right) \div \frac{5}{6}.$$

5. A room, 22 feet long, requires 58¾ yards of carpet ¾ of a yard broad to cover it. Required the breadth of the room.

6. Find the simple interest of £517 for 2½ years at 3½ per cent.

7. The *hectare* is a square whose side is 100 mètres. Express the hectare in acres—the mètrè being 39·37 inches.

8. The pound sterling is worth in Canada 4 dollars 75 cents. Reduce 1000 dollars to pounds.

N.B.—The working of each question, as well as the answer, must be given in full.

ALGEBRA.

1. Add together—

$$\frac{1}{2}(2a - 3b + 4c), \frac{1}{3}(2b - 3a + 4c), \text{ and } \frac{1}{4}(2c - 3b + 4a).$$

2. Divide $a^4 + 8b^2x^2(a^2 - 2) + 16b^4x^4$ by $a^2 + 4bx + 4b^2x^2$.

If $a = 1$, the quotient is a complete square; give its square root.

3. Resolve into factors :—

$$(1.) (3x - 2)^2 - (x - 3)^2.$$

$$(2.) (x + y)^2 + 2(x^2 + xy) - 3(x^2 - y^2).$$

$$(3.) (1 + ax)^2 - (a + x)^2.$$

4. A cistern would be filled by the influx pipe in 15 minutes, and emptied by the efflux pipe in 17 minutes. How long will it take to fill the cistern when both pipes are open together?

5. Solve the following equations :—

$$(1.) \frac{1}{4x} + \frac{1}{7x} = 11.$$

$$(2.) \frac{4x - 2}{3} + 4y - 3 = 19.$$

$$\frac{8y - 6}{13} + 9x - 7 = 40.$$

$$(3.) \sqrt{30 + x} + \sqrt{10 + x} = 10.$$

6. A room is twice as long as it is broad; if you increase the length of the room by 4 feet and its breadth by 2, the area of the floor will be increased by 152 feet. Required the dimensions of the room.

7. Find the least common multiple of $2x^2 + x - 6$ and $4x^2 - 4x - 3$.

N.B.—The working of each question, as well as the answer, must be given in full.

SECOND DAY.—OPTIONAL.

GREEK.

Translate:—

I. (*Herodotus, Book I.*)

Ἐχοντι δέ οἱ τοῦτον τὸν πόνον πέμψασα ἡ Τόμυρις κήρυκα ἔλεγε τάδε· ὦ βασιλεῦ Μήδων, παῦσαι σπεύδων τὰ σπεύδεις· οὐ γὰρ ἂν εἰδείης εἴ τοι ἐς καιρὸν ἔσται ταῦτα τελεύμενα· πανσάμενος δὲ βασιλεὺς τῶν σεωντοῦ, καὶ ἡμέας ἀνέχεν ὀρέων ἀρχοντας τῶν περ ἄρχομεν. οὐκ ἂν ἐθέλῃς ὑποθήκησι τηρίδει χρεέσθαι, ἀλλὰ πάντα μᾶλλον ἢ δι' ἡσυχίης εἶναι. σὺ δὲ εἰ μεγάλως προθυμέαι Μασσαγετέων πειρηθῆναι, φέρε, μοχθὸν μὲν τὸν ἔχεις ζευγνύς τὸν ποταμὸν, ἄφες, σὺ δὲ, ἡμέων ἀναχωρησάντων ἀπὸ τοῦ ποταμοῦ τριῶν ἡμερέων ὁδὸν, διάβαινε ἐς τὴν ἡμετέρην. εἰ δ' ἡμέας βούλῃαι ἐσδέξασθαι μᾶλλον ἐς τὴν ὑμετέραν, σὺ τῷτ' ὁδοῖς. Ταῦτα δὲ ἀκούσας ὁ Κῦρος συνεκάλεσε Περσέων τοὺς πρῶτους, συναγείρας δὲ τούτους ἐς μέσον σφί προετίθει τὸ πρῆγμα, συμβουλευόμενος ὁκότερα ποίει. τῶν δὲ κατὰ τῷτο αἱ γνώμαι συνεξέπιπτον, κελυνόντων ἐσδέκεσθαι Τόμυριν τε καὶ τὸν στρατὸν αὐτῆς ἐς τὴν χώραν.

Parse πέμψασα. Parse παῦσαι. Parse εἰδείης. Parse ὀρέων. Parse ὑποθήκησι,—give its derivation. Parse πειρηθῆναι. Parse ἄφες. Parse πρῆγμα,—give its derivation.

Numerical value, 50.

Translate:—

II. (*Homer, Iliad, Lib. II.*)

Ὅν δ' αὖ δῆμον ἄνδρα ἴδοι, βοῶντά τ' ἐφεύροι,
τὸν σκῆπτρῳ ἐλάσασκεν, ὁμοκλήσασκέ τε μύθῳ·
Δαϊμόνι, ἄτρεμας ἦσο, καὶ ἄλλων μῦθον ἄκουε,
οἱ σέο φέρτεροί εἰσι· σὺ δ' ἀπτόλεμος καὶ ἀναλκις,
οὔτε ποτ' ἐν πολέμῳ ἑναριθμῖος, οὔτ' ἐν βουλῇ.
οὐ μὲν πως πάντες βασιλεύσομεν ἐνθάδ' Ἀχαιοί·
οὐκ ἀγαθὸν πολυκοιρανίη· εἰς κοίρανος ἔστω,
εἰς βασιλεὺς, ὃ ἔδωκε Κρόνου παῖς ἀγκυλομήτεω
σκῆπτρόν τ' ἥδ' ἐθέμιστας, ἵνα σφίσιν ἐμβασιλεύη.
ὣς ὅγε κοιρανέων ὀλεσε στρατόν· οἱ δ' ἀγορήνδ' ἐ
αὐτῖς ἐπεσεύοντο, νεῶν ἀπο καὶ κλισιάων,
Ἰλῆϊ· ὥς δτε κύμα πολυφλοίσβοιο θαλάσσης
Αἰγυαλῷ μεγάλῳ βρέμεται σμαραγεῖ δέ τε πόντος.
Ἄλλοι μὲν ῥ' ἔζοντο, ἐρήτυθεν δὲ καθέδρας.

Parse ἐφεύροι. Parse ἦσο. Parse φέρτεροί,—compare it. Parse πολυκοιρανίη. Parse ὀλεσε. Decline κύμα in the singular, dual, and plural. Compare μεγάλῳ.

Numerical value, 50.

III.

Translate into Greek the following passage:—

Diogenes having heard a certain one saying, "Life is an evil," said, "Life is not an evil, but to live evilly, that is an evil."—Numerical value, 50.

IV.

Derive the following words from the Greek:—

Episcopal, Metallurgy, Apocalypse, Genealogy, Prophet, Planet, Misanthrope, Mythology, Ethnology, Polynesia, Apostrophe, Anonymous, Synonymous, Hygrometer, Eulogy, Epitaph, Epidemic.—Numerical value, 50.

[To pass, the candidate must do all the four passages, and obtain 140 marks.]

GERMAN.

1. Translate into English :—

Mein lieber Herr und Ehewirth! Magst du
 Ein redlich Wort von deinem Weib vernehmen?
 Des edeln Ibergs Tochter rühm' ich mich,
 Des vielerfahnen Manns. Wir Schwestern sassen,
 Die Wolle spinnend, in den langen Nächten,
 Wenn bei dem Vater sich des Volkes Häupter
 Versammelten, die Pergamente lasen
 Der alten Kaiser und des Landes Wohl
 Bedachten in vernünftigen Gespräch.
 Aufmerkend hört' ich da manch kluges Wort,
 Was der Berständ'ge denkt, der Gute wünscht,
 Und still im Herzen hab' ich mir's bewahrt.
 So höre denn und acht' auf meine Rede!
 Denn, was dich presste, sieh, das wusst' ich längst.
 —Dir grollt der Landvogt, möchte gern dir schaden,
 Denn du bist ihm ein Hinderniss, dass sich
 Der Schwyzer nicht dem neuen Fürstenhaus
 Will unterwerfen, sondern treu und fest
 Beim Reich beharren, wie die würdigen
 Alvordern es gehalten und gethan.—
 Ist's nicht so, Werner? Sag' es, wenn ich lüge!

2. Parse the following phrases, conjugating the verbs :—*Rühm' ich mich; möchte gern dir schaden; sag es wenn ich lüge!*

3. Give examples from the above passage of verbs with separable and inseparable prefixes. Under what circumstances is the separable prefix separated from the verb?

4. Translate into German :—

Emperor Otto the Great was feared in all districts (*Land*) of Germany, for he was severe, and without mildness. He wore (*tragen*) a beautiful red beard, (*Bart*), and what he swore by this beard, he made true and unavoidable (*unabwehrlich*).

NATURAL PHILOSOPHY.

1. State and prove the fundamental property of the lever.

Two weights respectively of 5 and of 10 lbs. are hung at the extremities of a straight bar 1 foot long, supposed without weight, where must the fulcrum be placed so that there may be equilibrium?

If the smaller weight descend $\frac{1}{100}$ th of an inch, how much will the larger ascend?

2. A triangular table, supposed without weight, is supported at its three angles, A, B, C; a weight is placed on it at any point O. Prove that the pressures sustained by the three props at A, B, C are respectively as the areas of the triangles O B C, O C A, O A B.

If O be the centre of gravity of the triangle, prove that the pressures are equal.

3. What is the origin of the force of gravity at the earth's surface? How far will a stone fall by the action of gravity in three seconds?

4. How is the result of the last question affected by the size and weight of the falling body (1) in vacuo; (2) in the air? Give an experimental determination of the pressure of the atmosphere. A vessel contains a quantity of air which weighs eight grains, and exerts a pressure of 17 lbs. per square inch. If three more grains of air be pumped in, what will the pressure become?

5. Explain the law of motion according to which force acts on a body in motion. Apply it to determine the path which a rifle-ball describes.

6. Define specific gravity. A body weighs 10 lbs. in air, and $8\frac{1}{4}$ lbs. in water. Determine its specific gravity. What will the same body weigh in salt water, whose specific gravity is 1.025?

7. Describe the common pump.

Part Third.

PERISCOPE.

EXCISION OF THE LOWER END OF THE RECTUM IN CASES OF CANCER—*Continued from p. 285.*—In women the position of the vagina in front of the rectum renders the operation not only less complicated, but more favourable as to prognosis; for the urethra and bladder are not concerned in the extirpation, and the surgeon is better able to determine the extent of the disease, and has also more room to work. The female rectum is, in fact, a much more superficial organ than the male. It is necessary in women, however, to save as much as possible of the vaginal wall, or, if it be removed, to form an artificial septum by proper suturing between the two cavities.

There have been proposed a number of methods of attacking the malignant growth, in order to have as little hæmorrhage as is consistent with thorough eradication. Most operators prefer placing the patient in the lithotomy position, though Mandt adopted the knee-elbow posture. Lisfranc operated in the following way: Having encircled the anus by two crescentic incisions, he dissected the bowel loose from surrounding tissues, then split the rectum longitudinally, to expose the parts fully, and excised as much of the cylinder as was necessary. The splitting of the tube was done at the posterior part, in order to avoid the peritoneum and the larger vessels. In females the vagina affords opportunity for introducing the finger in front of the growth, and in males it is well to have a large bougie in the bladder. If the anus is not involved, the external sphincter may be preserved by making a single straight incision from the central tendon of the perineum to the coccyx, dissecting up the skin and the split sphincter on each side, and then extirpating the lower part of the rectum in the ordinary manner. Another method is to form a perineal flap, convex towards the scrotum, and to dissect this and the sphincter backward, over the coccyx. The manœuvre exposes the rectum, which is excised, and afterwards the flap is sutured into its original position (*Phila. Med. Times*, 15th Nov. 1873, p. 103). In any of these procedures the hæmorrhage may be profuse from the hemorrhoidal, the transverse perineal, and the superficial branches of the internal pudic arteries. The cut vessels may be carefully tied as soon as divided, or the galvano-caustic knife or the *écraseur* may be employed in the various stages of the extirpation (*Edinburgh Medical Journal*, March 1874, p. 854). The first method was adopted by Dr Lewis in the present case, and was eminently satisfactory, for scarcely one fluid ounce of blood was lost. This is certainly at variance with the usual descriptions of this formidable and so-called bloody

operation, though it must be admitted that Pinault often saw the rectum extirpated by Lisfranc, without a single vessel requiring ligation (Vidal [de Casis], *Cancer du Rectum*, p. 89).

The last step in the operation consists in drawing down the amputated gut, which is done by loosening the cellular tissues, and by the effacement of the normal curves in the viscus and attaching it to the integument. The sutures will probably tear out, but it perhaps gives a chance for portions to become united, and may thus hasten the cure.

The sequelæ most to be dreaded are pelvic suppuration, phlebitis, and peritonitis. Two of Lisfranc's early cases succumbed to the first of these causes, and cases have been recorded of a fatal issue attending the occurrence of phlebitis. Billroth considers the use of many drainage-tubes a very important item in the operation, to prevent burrowing of pus. Owing to the proximity of the peritoneum in all cases, and the great danger in wounding it in those instances where the disease is situated high up in the rectum, peritonitis is to be anxiously looked for in every patient, and its advent gives a very foreboding outlook. This membrane passes from the bladder or uterus to the anterior surface of the rectal tube, but the exact distance from the anus at which this takes place must be an indeterminate quantity. Lisfranc, so says Vidal, gave the distance at six inches in woman and four inches in man; while Malgaigne states that two inches for the female and two or three for the male is the proper estimate. Blandin, according to the same authority as above, gives three inches in man and one and a half in woman. Vidal himself measured it in several subjects, and found that the mean was less than two inches, the women being below the men in every instance (*Cancer du Rectum*, p. 82). Notwithstanding the discrepancy in these measurements, and the low mean at which the distance from the anus to the peritoneal investment is put, it seems to be a fact that at least three, if indeed not four, inches of the tube can be removed with comparative impunity. The importance, however, of respecting the immediate vicinity of this readily inflamed membrane is seen when it is recalled that Vidal reports a fatal case in which the autopsy showed a hole in the peritoneum large enough to admit three fingers (*Pathologie Externe*, v. 229, 230). On the other hand, Maisonneuve had a case of recovery where the peritoneum was extensively wounded (Nélaton's *Clinical Surgery* [Atlee], p. 566). The great difference in these measurements depends, I think, on the manner in which they were made. The rectum is a tube that is subject to great distension, and hence does not extend from the anus upward as a perfectly straight smooth cylinder. Consequently it is easily appreciated that to determine the number of inches that may be excised without wounding the peritoneum, it is necessary to have the tube detached from its surroundings, and to have the reduplications and curves effaced. This is the condition in which the

surgeon places the gut by dissection and traction before he cuts it off from its connexion with the remainder of the alimentary canal. To determine this point, I have made a number of measurements in the following manner:—

First, having placed the left hand in the peritoneal cavity, I carried my finger-nail to the point where the serous membrane crossed from the bladder or uterus to the anterior wall of the rectum; then I introduced a graduated stick into the anus, and thrust it upward until the end touched the finger-nail. This was done as carefully as possible, to avoid undue pressure. By this means the distance from the bottom of the peritoneal cavity to the verge of the anus was given; but this was not the length of rectum that extended from the lowest point of attachment of the peritoneum to the anus, for that was longer, on account of the folds in the tube. To obtain the latter measurement, I dissected out the rectum, and a piece of the bladder or uterus, with the peritoneum still attached; this was laid upon a table, and a graduated ruler pushed into the anus as before. The rectum was then smoothed out upon this, but not rendered tense, and the number of inches noted. The difference was so marked that it surely must be the cause of the great discrepancy between authors as to the number of inches of the rectum that are uncovered by peritoneum; in front posteriorly it makes no difference, because the peritoneum does not come anywhere near the seat of operation.

A table of the results shows that in the eight cases measured the average was $3\frac{1}{2}$ inches.

1. Male,	21 years.	<i>In situ</i> ,	$1\frac{1}{2}$ in.	Removed	4 in.
2. "	28 "	"	2 in.	"	4 in.
3. "	27 "	"	$1\frac{1}{4}$ in.	"	$3\frac{3}{4}$ in.
4. "	23 "	"	$1\frac{1}{4}$ in.	"	$3\frac{1}{2}$ in.
5. "	26 "	"	$1\frac{1}{2}$ in.	"	$3\frac{3}{4}$ in.
6. "	40 "	"	2 in.	"	$4\frac{1}{4}$ in.
7. Female,	45 "	"	1 in.	"	$3\frac{1}{2}$ in.
8. "	68 "	"	$1\frac{3}{4}$ in.	"	$3\frac{3}{4}$ in.

The measurements *in situ* are, of course, of less importance, because, when the operation of excision is performed, the rectum is drawn down, and has its folds obliterated. They are given in the table because I believe that the conflicting opinions mentioned above are the result of inaccurate statements as to which method of measuring was adopted.

It is now necessary to discuss the immediate results of the operation of extirpation of the rectum, to consider the subsequent condition of the patient thus deprived of his sphincter muscle, and to obtain some idea of the prognosis in regard to a return of the malignant disease. Lisfranc operated on nine cases, obtaining five cures, three deaths from pelvic cellulitis, phlebitis, etc., and one doubtful result (Velpeau, *Nouv. Elém. de Méd. Oper.* iii. 1033).

Dieffenbach excised the inferior portion of the rectum not less than thirty times, and reports that not one case died soon after the procedure, but that a large proportion continued well for many years. Billroth is said to have operated sixteen times, out of which number only four died. Indeed, with him extirpation of the rectum is the rule in the treatment of cancer of that organ (*New York Medical Record*, 11th November 1876).

Dr Schmidt of Leipzig gives (Günther's *Blutigen Operationen*, iv. l. p. 65) a table of thirty-three cases, collected from various sources, with the following results:—

Cured,	.	.	.	.	.	.	.	20 cases.
Improved,	.	.	.	.	.	.	.	2 "
Death,	.	.	.	.	.	.	.	8 "
Return of disease,	.	.	.	.	.	.	.	1 "
Doubtful,	.	.	.	.	.	.	.	2 "
								—
Total,	.	.	.	.	.	.	.	33

If we consider the doubtful cases to have been fatal ones, this gives a mortality of 30·3 per cent. occurring subsequent to extirpation of the rectum. It is not possible to make any more accurate deduction than this, because the time after operation that each case is reported has much to do with its place in the table, as cured, improved, or returned. That in the majority of instances the malignant process does finally recur, is, I suppose, admitted by all. That a long period of amenity from the torture of cancerous disease of the anus and rectum may be obtained by operative interference, is evinced by the fact that Nussbaum's case, above mentioned, where portions even of adjacent organs were removed, survived three years before being obliged to succumb to the recurrence of the disease. A case of Billroth's lived four years and nine months, and this surgeon examined a case that had been submitted to operation four years previously by Schuh, without finding any trace of return (Esmarch, in v. *Pitha*, and Billroth, *op. cit.*) Another case of Schuh's lived seven years. These facts certainly speak well for the adoption of the procedure in cases where the disease can be entirely eradicated.

In view of the circumstance that the operations, though numerous on the continent of Europe, are not all carefully reported, it is impossible to arrive at exact data to determine the average period between the excision and the return of the disease, and in what cases the malignant trouble is truly extirpated for ever. Dieffenbach was of the opinion that relapse occurred far less frequently than in cancer of the mamma (*op. cit.* p. 714). While, on the other hand, Malgaigne says he has seen it occur in many instances, and mentions one patient where it occurred before cicatrization was complete (*op. cit.* p. 441). At any rate, the long periods of survival after the operation, in the cases mentioned above, would seem

to show the possibility of relapse being very distant, and it is well known that epithelioma, which is the form usually found, is the most easily eradicated of the varieties of cancer.

The experience in the vast majority of cases where several inches of the bowel have been removed, is that incontinence of fæces does not follow, unless the contents be very fluid. Whether it be because the superior circular fibres of the muscular coat of the rectum act as a subsidiary sphincter, or because in the normal condition the rectum is empty and becomes full only as the desire to go to stool occurs, it matters not; case after case have caused operators almost universally to know that absence of the sphincter ani muscle, and even of three or four inches of the rectal tube, does not necessitate a condition of involuntary evacuation of consistent stools; and in certain instances liquid fæces and even flatus have been under control.

A secondary result which sometimes occurs is cicatricial stricture; but this is a condition quite readily treated by dilatation, and is not by any means such a severe complication as the cancerous constriction likely to be developed if no operative interference had ever been undertaken.

Let us, in conclusion, take a survey of the operation of excision of the rectum as practised in America. Here we shall find very few data; for though Lisfranc and Dieffenbach operated so frequently in Europe nearly half a century ago, and though rectal cancer is a common affection in this country, yet the operation does not appear to have been accepted as a method of treatment. I have found reported but five instances of extirpation for cancerous disease, and a few cases where a prolapsed rectum has been excised with the knife. The latter procedure, indeed, seemed to be an introduction to the more daring operation of dragging down a diseased rectum from its normal position and cutting off several inches of the tube.

In 1825, J. W. Brite, of Kentucky, excised five or six inches of the rectum in a case of prolapse occurring in a negro child of three years. At the end of five months, after numerous complications, the child is said to have been fat and in perfect health (*Medical Recorder*, Philadelphia, 1826, vol. x. p. 311).

The same operation was recorded in 1832, as performed on a child about six years of age, by J. W. Heustis, of Alabama (*American Journal of Medical Sciences*, vol. xi. p. 411).

In this same year Bushe, of New York, was consulted by a man who suffered from cancer of the lower end of the rectum, extending about one inch and a half upward from the anus. He made an elliptical incision around the anal aperture, and removed the diseased portion of gut. There followed slight prolapse, which was, however, supported readily by a sponge and elastic bandage, and the patient was able to keep the solid fæces well under control. Seven months later the patient died of what his family called consumption. (Bushe, on *Diseases of the Rectum*, New York, 1837, p. 294.)

Some time before 1839, Mott, of New York, must have had at least two cases, for Velpeau, in speaking of the condition of patients after extirpation of the rectum, says, "those of V. Mott were perfectly restored." Although I have been unable to find the original report of these cases, I consider them authentic, because the above words occur in Mott's American edition of Velpeau (*Velpeau's Operative Surgery*, vol. iii., 1138, Mott's edition of 1847, from Paris edition of 1839, and Günther's *Blutigen Operationen*).

In 1868, Alden March, of Albany, removed one and a half inches of a scirrhus rectum from a woman aged 26 years (*Transactions of New York State Medical Society*, 1868). Six months afterwards the case was doing well, and there was apparently no return, for in a letter received by me a short time ago from Dr Henry March, son of the operator, the writer says:—"The successful operation (as well as no return of the disease), the case spoken of in Professor Gross's latest edition, was performed by my late father, 8th January 1868." From this it would seem that there has been no return of the malignant process, or that the patient has died since the operation of some other trouble. The very day on which Dr Levis operated on the case forming the basis of this paper, the *New York Medical Record* arrived, containing an account of an almost identical operation in the hands of Dr C. K. Briddon of New York (*New York Medical Record*, 6th January 1877, p. 12, and *Archives of Clinical Surgery*, February 1877). The case was that of a mulatto woman, aged 45, in whom the disease extended upward some two and a half inches. The operation was performed in November 1876, and Dr Briddon tells me that the patient expresses herself as benefited and relieved of pain and tenesmus. He states that "the cut end of the rectum has retracted nearly two inches, and is contracting, so that, if she lives long enough, she will have stricture; there is a disposition to return of the disease, not in the rectum, but in the cicatrix intervening between the bowel and the perineum." In this case the rectum was freely movable, and the adjacent tissues were not involved, except that there was slight implication of one of the lymphatic glands, which was removed, however, at the time of the operation. The patient had subsequently ischio-rectal abscess and phlebitis, has only imperfect control over defecation, and a month and a half ago was still confined to bed. Whether there was any attendant organic disease of other viscera, I know not; but Dr Briddon, who has had unusual results in cases of colotomy, says he regards the latter as the preferable operation in cases of rectal cancer.

About two weeks ago Dr Levis operated on a second case, but the issue was not so fortunate. According to the notes of Dr F. C. Hand, the patient, aged fifty-two years, had a carcinomatous tumour, the size of a small hen-egg, situated at the right side of the bowel, which had existed about three months. An incision

was first made along the right side of the anus, and the finger introduced to tear up the attachments all around the lower end of the rectum. The incision was then extended around the anus in such a manner as to encircle it, and the operation completed in very much the same manner as in the first case. The section of the tube removed was about one and a half inches. The patient became jaundiced, and died on the fourth day. The autopsy made by Dr Longstreth showed a slight pneumonic patch in the right lung, considerable lymph and pus in the pelvic cavity, and general peritonitis. The jaundice appeared to be the result of pressure from a few enlarged glands, probably not cancerous, near the common duct. There was no wound found in the peritoneum, the lowest point of which was three-quarters or one inch above the end of the excised bowel.

Summing up, then, we have in America Bushe, Mott, March, Briddon, and Levis, who have ventured to perform the operation of extirpation of the rectum, and in only one of the seven cases has death occurred as a consequence of the procedure.

Note.—Recently I have been informed that Dr Briddon's case finally died of pneumonia and pleurisy, and that an examination of the specimen showed the opinion in regard to the return of the disease to be erroneous. I have also become cognisant of three other cases where excision of the rectum was done within a few weeks past, for the removal of cancer of that organ; one in the hands of Dr Jos. R. Wood, of New York; another by Dr D. Hayes Agnew, of Philadelphia; and the third by Dr Levis, in San Francisco, whither he was summoned to perform the operation. Dr Agnew's case died with symptoms of pyæmia, and Dr Levis's apparently from shock of etherization and operation. Of Dr Wood's case I know nothing as to result.

An abstract of Dr Levis's first case was originally published in the *Archives of Clinical Surgery* for February 1877.—*Philadelphia Medical and Surgical Reporter*.

SUMMARY OF DR MARION SIM'S PAPER ON THE DISCOVERY OF ANÆSTHESIA.—1st, That since 1800, the inhalation of nitrous oxide gas produced a peculiar intoxication, and even allayed headache and other minor pains; 2d, That Sir Humphrey Davy proposed it as an anæsthetic in surgical operations; 3d, That for more than fifty years the inhalation of sulphuric ether has been practised by the students in our New England colleges as an excitant, and that its exhilarating properties are similar to those of nitrous oxide gas; 4th, That the inhalation of sulphuric ether, as an excitant, was common in some parts of Georgia forty-five years ago, though not practised in the colleges; 5th, That Wilhite was the first man to produce profound anæsthesia, which was done accidentally with sulphuric ether in 1839; 6th, That Long was the first man to intentionally produce anæsthesia for surgical operations, and that this

was done with sulphuric ether in 1842; 7th, That Long did not by accident hit upon it, but that he reasoned it out in a philosophic and logical manner; 8th, That Wells, without any knowledge of Long's labours, demonstrated in the same philosophic way the great principle of anæsthesia by the use of nitrous oxide gas (1844); 9th, That Morton intended to follow Wells in using the gas as an anæsthetic in dentistry, and for this purpose asked Wells to show him how to make the gas (1846); 10th, That Wells referred Morton to Jackson for this purpose, as Jackson was known to be a scientific man and an able chemist; 11th, That Morton called on Jackson for information on the subject, and that Jackson told Morton to use sulphuric ether instead of nitrous oxide gas, as it was known to possess the same properties, was as safe, and easier to get; 12th, That Morton, acting upon Jackson's off-hand suggestion, used the ether successfully in the extraction of teeth (1846); 13th, That Warren and Hayward and Bigelow performed important surgical operations in the Massachusetts General Hospital (October 1846), on patients etherized by Morton, and that this introduced and popularized the practice throughout the world.—*Virginia Medical Monthly*, May 1877.

FORMATION OF EPIDERMIS BY THE TRANSPLANTING OF HAIRS.—Dr Schweininger reports successful results in inducing cicatrization by transplanting to granulating surfaces hairs pulled out by the roots. Placed upon ulcers they formed as many centres of new epithelial growth, which spread outwards, coalesced, and produced rapid and complete cicatrization. These islands proceeded without doubt from the cells of the outer root sheath, which is continuous with the epidermal cells of the rete mucosum, so that epithelium is here developed from preëxisting epithelial cells.—*Boston Medical and Surgical Journal*, June 1876.

SURGICAL STATISTICS.—Dr Burow of Königsberg reports (*Archiv Klin. Chir.* xxi. 1876) the results of 122 amputations with 9 deaths—7 $\frac{1}{3}$ per cent.

33 amputations of thigh,	6 deaths—18 per cent.
24 " " leg,	3 " 12 "
25 " " arm,	0 "
29 " " forearm,	0 "
9 " " foot,	0 "
2 " " hand,	0 "

Here the treatment was to leave the wound open freely and keep it clean.—*Transactions of Medical and Chirurgical Faculty of Maryland*.

A SYNOPSIS OF PRIVATE OBSTETRICAL PRACTICE FOR FORTY-TWO YEARS PREVIOUS TO 1ST JANUARY 1876.¹ By WILLIAM INGALLS, M.D.—Within the forty-two years previous to 1st January 1876, two thousand obstetrical cases were under my care.

¹ Read before the Obstetrical Society of Boston, 10th February 1877.

Below are the records of such cases as were of special interest or importance, or which required from various causes the application of art. Abortions, premature labours, and consultation cases are not included in this number; an exception, however, will be noticed in the record of plural births.

Plural births: thirty-three cases and sixty-seven children; one in about sixty-two labours; one case of triplets; the remainder, twins; sex of the children as follows:—

	Male.	Female.	Total.
One case of triplets,		3	
Four cases of miscarriage at four, five, seven, and eight months,	8		
Five cases of miscarriage at four, five, seven, and eight months,	5	5	
Five cases at term, one child of each sex,	5	5	
Eleven cases, all males,	22		
Seven cases, all females,		14	
	<hr/> 40	<hr/> 27	67

Deaths of Mothers: Three Cases.—There were three deaths of mothers attributable to or connected with childbirth, each occurring within seven days of that event, and there were no other deaths due to that cause.

Case I.—S.S., age thirty-eight. This was the sixth single birth in eight years. The labour was normal, but the lady was, and remained, blanched, and coughed a great deal, having a sense of weight or oppression over the chest. She died on the seventh day after delivery.

The autopsy was made by Dr Bowditch. "There was found cartilaginous thickening of the mitral valves of the heart, and a congested state of the lungs, . . . slight trace of tubercle, . . . uterus well contracted, peritoneum and intestines normal."

Case II.—P. S., age twenty-two. Primipara. Upon my arrival I was informed by the midwife in attendance that the existing condition of things had remained the same for from four to five hours. I found a second stage of labour, the os not fully expanded, an œdematous anterior lip, and a protruding *caput succedaneum*; the patient was uncomplaining and almost indifferent, evincing great fatigue rather than exhaustion. Having drawn off the urine and succeeded in gently forcing back the anterior lip, I waited for two or three pains, when, finding that the head remained stationary, and taking into consideration the condition of the patient, I applied the forceps, and having brought the head down far enough to cause bulging of the perinæum, disengaged the instrument; after this with the third or fourth pain the head was born, the child giving evidence of being alive by gasping and uttering one or two feeble cries. There were several minutes (four or five) before a shoulder could be brought down; as soon as this was effected the child was born dead. The mother seemed to be going on well up to the seventh day, when she suddenly died. Autopsy was not permitted.

Case III.—Mrs R., age thirty-six. A well-formed and healthy

woman; had been delivered by me successfully three times. The fourth labour went on propitiously up to the moment of the expulsion of the child, which came quickly with a gush, the placenta following immediately, and simultaneously a deluge of blood and collapse of the mother. Instantly I sprang upon the bed, and seizing the legs under my arms, elevated the pelvis, and ordered snow or ice to be brought without delay, and had a drachm of fluid extract of ergot and half an ounce of brandy poured down the throat. Resigning my position to the husband, I passed my hand within the expanded uterus, and, with the other, kneaded it externally; there was no contracting response. Basins of snow arriving, a ball of it was conveyed within the womb, and soon after this I was enabled to inject water at a low temperature. Pressure upon the abdominal aorta momentarily checked the flowing of blood, but it seemed to me there was little left within the body that could come away. Dr Arnold, who arrived fifteen minutes before the death, has kindly sent me his notes of the case, from which I make the following extracts:—

“A remarkable feature was the irregular contraction of the uterus; sometimes it seemed to have contracted quite firmly, as was evinced by the small, rounded tumour and the hard, firm walls, and again to dilate to the size of one four months pregnant, while digital examination found the walls of the uterus soft and spongy. This contraction and dilatation occurred irrespective of the compression of the aorta. Although during the continued compression of the aorta but little blood was lost, she still sank.”

There had been no contraction of the womb up to the moment of the first introduction of the hand of Dr Arnold, but in two or three minutes, by our united efforts of kneading and compressing the aorta, the contractions mentioned in his notes took place. The time from the birth of the child, which is alive and well, to the death of the mother was one and a half hours. I may mention that perchloride of iron was sent for, but it failed to arrive.

The sum of the cases I have recorded is as follows:—

Delivery during variola,	1
“ “ scarlatina,	2
“ “ rubeola,	1
Plural births,	33
Deaths of mothers within seven days,	3
Rigid os,	2
Convulsions,	3
Flooding, ante partum,	19
“ post partum,	15
Puerperal hysteria,	1
“ mania,	1
Hydrops amnii,	1
Breech presentations,	2
Dead born, including one from prolapsus of cord,	9
Phlegmasia dolens,	2
Craniotomy,	1

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By W. HANDSEL GRIFFITHS, Ph.D., L.R.C.P. Ed., Licentiate of the Royal College of Surgeons of Edinburgh; Lecturer on Medical Chemistry in the Ledwich School of Medicine, Dublin; Corresponding Member of the Therapeutical Society of Paris, and of the Pharmaceutical Society of St Petersburg; Honorary Member of the Ontario and Chicago Colleges of Pharmacy, etc.; Librarian to the Royal College of Surgeons in Ireland.

[The author of these Reports will be glad to receive any books, pamphlets, or papers relating to *Materia Medica* or Therapeutics. They may be forwarded through the agencies of the *Edinburgh Medical Journal*.]

NITRITE OF AMYL IN AGUE.—The *Glasgow Medical Journal*, April 1877, quotes from an article by Surgeon W. E. Saunders in the *Indian Medical Gazette*, on the use of nitrite of amyl in ague. He uses it mixed with an equal part of oil of coriander, to render it less volatile and to cover the odour. He states that it is the most powerful diaphoretic he has ever seen, and as such he now uses it in all cases of fever. In no case of ague did the nitrite of amyl fail to remove the attack in about one-third the usual time, and in most instances the fever did not return again. The following is the mode of administration adopted:—Four drops of the mixture, or two of the nitrite of amyl, are poured on a small piece of lint, which is given into the hands of the patient, and he is told to inhale it freely. He soon becomes flushed, and his pulse and respiration are much accelerated; when he feels warm all over, the inhalation is discontinued, as the symptoms continue to increase for a short time afterwards. A profuse perspiration now sets in which speedily ends the attack. In some cases, however, the cold stage merely passed off without any hot or sweating stage.

PHYSIOLOGICAL ACTION OF NITRITE OF AMYL.—Berger found that in noncurarised dogs, whose vagi were divided, the division of the spinal cord below the atlas was followed by lowering of the blood-pressure when the vapour of amyl nitrite was introduced into the lungs by artificial respiration. Lowering of the blood-pressure by nitrite of amyl is therefore not dependent on the vaso-motor centre in the medulla. The frequency of the pulse in warm-blooded animals was always increased, and the respiration retarded by fatal doses.—Abstract in *Jl. of Anatomy*, vol. x. p. 658.

PHYSIOLOGICAL ACTION AND THERAPEUTIC USES OF SALICYLIC ACID, SALICYLATE OF SODA, SALICINE, ETC.—The following is a *résumé* of the more important recent papers on this subject.

Dr L. W. Marshall calls attention to the fact that drowsiness is occasionally induced by the use of salicylic acid and its compounds. Twitchings of the muscles of the forearm and suppression of the secretion of the skin were also symptoms noticed by him. He believes that for its antipyretic properties, salicylic acid is un-

rivalled. As a febrifuge in febricula it has proved very serviceable in his hands. Care should be taken in its administration in typhoid fever, on account of its tendency to produce diarrhœa and dysentery; the soda salt has not this tendency. His trial of salicine was unsuccessful.—*Brit. Med. Jl.*, 24th Feb. 1877.

Dr William Squire writes that saline as an antipyretic must certainly rank below either quinine or digitalis. Salicylic acid is comparable with perchloride of iron in the control it exercises over rheumatic pyrexia. It would also appear to exercise some other beneficial influence on rheumatism, and to be useful in its later stages.—*Brit. Med. Jl.*, 10th March 1877.

In the *British Medical Journal*, 17th March 1877, are recorded several cases of acute rheumatism treated with salicylic acid in the Derbyshire General Infirmary under the care of Dr Ogle. In all, the marked and rapid disappearance of all the physical signs of the disease was manifest. The heart complication which existed in three of the cases seemed equally benefited. During the treatment with the acid, the patients were bathed with copious perspiration, the bedding having frequently to be changed. In several of the cases, where large and frequent doses of the acid were taken, the drug seemed to produce very great depression, with a very slow and soft pulse, and perhaps convalescence was protracted (after the rheumatic symptoms disappeared) on that account; it seems probable that a stimulant, as ammonia, given in small doses with each dose of the acid might obviate this result to some extent. One case was remarkable, inasmuch as the patient, a girl of sixteen, after taking 180 grains in 18 hours, appeared to be suffering from all the effects of severe cinchonism. In all the cases, the acid was given in solution, with bicarbonate of soda, just sufficient to dissolve it. This forms a pleasant and agreeable mixture, almost without taste, quite in contrast with the solution of the acid in borate of soda, which is decidedly the reverse of pleasant.

M. Jaccoud speaks favourably of salicylate of soda as an antipyretic in typhoid fever. A few drops of chloroform combined with it will prevent the nausea and vomiting which it occasionally produces. Large doses must be given—as much as two drachms in two portions at an interval of a quarter of an hour between seven and eight o'clock in the evening. The fall of temperature commences half-an-hour after the exhibition of the remedy, varying from one degree to one degree and a half (centigrade); it can fall as low as two degrees and a half in five hours. The temperature can be kept down by small doses frequently repeated. After the first dose, the quantity of the urine is diminished, and it becomes dense and loaded with uric acid and urates. Thus, in favouring the elimination of nitrogenous material, it resembles benzoic acid. To avoid the danger of catarrhal nephritis, the patient should drink several pints of fluid in the twenty-four hours after its administration. It is slowly eliminated; traces can be found in the urine

forty-eight hours after its ingestion.—*Le Mouvement Médical*, 24th March.

D. Erichsen says that he has found in severe cases of scarlatina that salicylic acid speedily produces a reduction of temperature, and corresponding amelioration of the general condition. He gives it in doses of one or two grains, according to the age of the child, every hour, during the first two hours, and afterwards every two hours. He has also found it useful as a prophylactic.—*St Petersburg Med. Woch.*, 24th March 1877.

In the opinion of Prof. Sée salicylic acid does not deserve the name of antipyretic, in the proper sense of the term. That it reduces abnormal temperature there can be no doubt; but he has never noticed a fall of more than one degree or a degree and a half, and even then this fall was not persistent or regular, as, after a time, whether the medicine were continued or not, the temperature rose to the same height as when the medicine was first administered. M. Sée is of opinion that salicylic acid and its preparations cure rheumatism, not by their antipyretic properties, but by some specific action on the morbid agent which generates the affection. He warns physicians against the use of salicylic acid in typhoid fever. In some cases that came under his observation, he noticed that all the patients, without exception, became delirious; when the medicine was suspended the delirium ceased; but when the medicine was resumed the delirium returned. M. Sée fears also that the administration of salicylic acid in typhoid fever would be likely to induce perforation of the bowel.—*British Medical Journal*, 31st March 1877.

Dr G. H. Dessaw, of New York, from an experience of thirty-four cases of articular rheumatism, considers that salicylic acid is destined to supersede all other remedies in this affection. In every case of diphtheria which he had seen in the commencement of its approach, and had treated with salicylic acid, a cure was effected. In the light of recent theories as to the nature of the cause of diphtheria, advanced by German authorities, namely, the germ theory, it would appear that salicylic acid is the scientific remedy for the disease. In eight cases of severe erysipelas the cure effected by salicylic acid was rapid and permanent, an improvement being observed in twenty-four hours. In scarlatina and in typhoid fever, Dr Dessaw's experience of salicylic-acid treatment is favourable. To the physiological symptoms of the drug, observed by various writers, Dr Dessaw adds dizziness and slight bleeding from the throat, which occurred in one case after using the pure acid.—*New York Medical Record*, 7th April.

In the *British Medical Journal*, 14th April, Dr Clement Daruty reports a case of rheumatic fever in which salicylate of soda and salicin completely failed to reduce the temperature or to mitigate the symptoms.

In the same journal, Dr Russell of the Birmingham General

Hospital reports eight cases of rheumatic fever treated with salicylic acid. In all these cases the temperature began to decline immediately with the first dose of the medicine, and underwent a rapid fall to the normal standard in from fourteen to sixteen hours, whilst the joint-symptoms were brought to an equally rapid termination.

Mr A. W. Postans gives the following method for preparing glycerole of salicin: the salicin and glycerin are first rubbed together in a glass mortar, and are then transferred to a porcelain dish, and a gentle heat applied until complete solution is effected. One drachm of glycerine will completely dissolve five grains of salicine. Mr Postans also gives a formula for a glycerole of pepsine and salicine.—*Pharm. Journ.*, 21st April 1877.

Dr W. Thomson of Peterborough states, that he feels perfectly confident that we have in salicine a most valuable remedy, especially in all malarious fevers. He records three cases treated successfully; the drug was given in thirty-grain doses every second hour. Dr Thomson is of opinion that the failure of the old-fashioned decoction of willow bark was from want of concentration, or the inability to prescribe a sufficiently large dose of the specific drug.—*British Med. Jl.*, 28th April 1877.

It appears from the investigations of Dr Danewsky that salicylate of soda exerts a characteristic action on the vascular system. At first it augments the energy of the cardiac contractions, causing more powerful systolic movements and increase of the blood-pressure. In consequence of its action on the vagi, the frequency of the pulse is sometimes greater and sometimes less than normal, while at a later period from paralysis of the excito-motor cardiac nervous system the pulse is weak. The augmentation of the blood-pressure is due partly to the greater energy of the cardiac contractions, partly to the direct stimulation of the vaso-motor centres. This is proved by the fact that the blood-pressure falls after division of the spinal cord in the cervical region; whilst it rises on the injection of the drug into the carotid artery, which causes the brain to receive a certain quantity of the remedy before the heart. There is an increased frequency of the respiratory movements due to irritation of the pulmonary vagi, and not to direct participation of the respiratory centre in the medulla. It is only after very large doses have been administered that the respiratory centre is gradually or rapidly paralyzed, and asphyxia is produced. The influence of the salt on the temperature is very inconstant and inconsiderable in healthy men and animals, but in the febrile state its action is more powerful. Dr Danewsky considers that in the febrile state there is diminution of blood-pressure as a result of diminished cardiac and vaso-motor activity, but when salicylate of soda is given it acts like quinine and digitalis in augmenting the blood-pressure, and promotes the elimination of caloric.—*Practitioner*, May 1877, from *Arbeiten aus der Pharmakolog. Laborat. zu Moskau*.

Mr A. D. L. Napier states that the form of rheumatic disease for which he has most frequently ordered salicine is the arthritic, and in these cases relief was almost invariably experienced; he has frequently seen reduction of pain, redness, heat, and swelling about an hour and a half after the administration of a twenty-grain dose. The salicylate of soda in addition to its general action in lessening arterial tension frequently acts as a powerful diaphoretic, diuretic, and sometimes as a sialagogue. Those latter effects seem to be more often caused by the soda salt than by the acid. Symptoms exactly similar to cinchonism may follow the prolonged use of salicine. It is necessary for the perfect action of salicine that the drug should be used in reduced doses for some time after acute symptoms are dispelled. In muscular rheumatism salicine affords some relief, but in Mr Napier's hand its action in such cases has given uncertain results. In neuralgic affections he has seen much good from salicylic acid, more especially in mixed cases of neuralgia and rheumatism. From its greater solubility, and from its being more easily taken by the majority of patients, Mr Napier has found the soda salt preferable to the acid, but with the exception of the greater diaphoretic action of the former he has been unable to discriminate between their diaphoretic action.—*Practitioner*, June 1877.

Mr J. W. White believes that, except in small doses, salicylic acid is the best prescribed in suspension with tragacanth or in the form of pill, especially as there is little doubt that, in soluble combinations with alkalies and alkaline salts, the properties of the free acid are more or less modified. If salicylic acid be beaten up with one-tenth of its weight of borax, and the same proportion of glycerine and tragacanth, an excellent pill-mass is procured, of which six grains represent five of the acid, and do not form an inconveniently large pill.

Mr J. C. Thresh undertook some experiments to ascertain whether or not the increased solubility of salicylic acid in solutions of borax and other salts was due to some chemical decomposition between the acid and the salts employed, and if the solutions thus formed possessed the antiseptic and antifermentative properties of the acid. He concludes from his experiments that some reaction, as yet undetermined, does take place between the acid and salts, yet that in whatever state the acid exists in those solutions it is capable of exhibiting in a high degree its characteristic properties.—*Pharm. Journ.*, 16th Dec. and 25th Nov. 1876, quoted in *Lond. Med. Record*, 15th June 1877.

Dr K. N. Macdonald puts on record (*Brit. Med. Jl.*, 16th June) a case of rheumatic fever, which was successfully arrested in five days by the use of salicin; ten-grain doses were given every four hours. Dr Macdonald remarks that there is scarcely room for doubt that the favourable issue in this case was mainly due to the salicin, and that in it we possess a valuable therapeutic agent in this troublesome and mischievous disease.

A case of acute rheumatism, treated by salicylic acid, under the care of Dr Dale of the West Norfolk and Lynn Hospital, is recorded in the *Medical Times and Gazette*, 19th May. The case was of special interest on account of the scarlatiniform rash which appeared. Dr Weber first called attention to this as being one of the occasional toxic effects of salicylic acid.

A case of severe rheumatic fever, treated by salicylate of ammonia, is given in the *Medical Examiner*, 19th April 1877, by Dr Barclay, of St George's Hospital. The antipyretic effect of the drug was well shown by the fall of three degrees after six doses of the medicine. When the medicine was discontinued the pains returned.

Professor G. Sée has lately read before the Paris Academy of Medicine an elaborate paper on salicylic acid and the salicylates, which is published in the *Union Médicale*, 3d July *et seq.* The following are his conclusions:—Its only advantage over carbolic acid as an external antizymotic agent is its privation of odour. As an internal antiseptic it manifests no appreciable effect in purulent affections or contagious and parasitical diseases—as diphtheria, or muguet, or gangrene, or finally in diabetes. As an antipyretic the acid and its salts possess only transitory and doubtful properties. The febrifuge power is exceedingly limited. In acute articular rheumatism its effects are most certain and prompt; in simple chronic rheumatism also its use has been satisfactory, and the same may be said of its employment in the acute crises which manifest themselves from time to time in simple rheumatism or in chronic rheumatic arthritis. It is, however, in acute and chronic gout that the results are most remarkable, the salicylic treatment rapidly effecting a complete cure without the production of any metastasis, the only inconveniences arising being some disturbances in the ear, and a certain amount of debility or narcotism. These latter disappear when the dose is diminished, but the perturbations of audition are more persistent. Salicylate of soda aids the elimination of gravel, and has also the advantage of allaying the nephritic pains in this affection. In certain facial neuralgias and sciatica the salicylic treatment has seemed to be of advantage, but its action in these affections is not definitely established. In painful affections of the spinal cord salicylate of soda produces calming effects, but a certain amount of debility is produced by the continuance of its employment.

At the meeting of the Paris Société de Thérapeutique, 17th April, M. Gubler recounted his experience of salicylic acid. He is of opinion that it possesses neither antipyretic nor antiphlogistic properties. In certain cases it produces copious diuresis; in others, on the contrary, the quantity of urine voided is diminished. The reason of this is, the salicylic acid stimulates the kidney whilst eliminating itself by that organ; but sometimes it irritates, and this irritation produces an increase of urine. If, however, the kidney be diseased, as in certain severe fevers, and in albuminuria, this

stimulation may go on to inflammation, and then there is a diminution of the water which passes through the kidney. It is probable that in cases in which it induces diuresis it brings on an arrest of temperature up to a certain point. M. Gubler found that the urine of patients taking salicine contains salicylic acid, and he regards this transformation as analogous to that of chloral into chloroform and formic acid. He has also observed that the urine of patients after taking salicylic acid is a brown bistre-like colour similar to the tint given to the urine by carbolic acid. M. Hogg stated that he had found carbolic acid in the urine of patients under the influence of salicylic acid.—Quoted in *London Medical Record*, 15th July.

Mr Erskine Stuart states that when salicylic acid is taken internally, it is excreted in the urine as salicyluric acid; salicine is excreted as salicyl-hydride. Salicylate of soda in solution is a very weak antiseptic, but it is excreted in a very active form, for urine passed three hours after taking a 15-grain dose of it, keeps fresh, free from ammoniacal odour, and perfectly clean, when exposed to the air for ten days.

From a careful study of the action of salicylic acid in nearly two hundred cases, Dr Bälz has deduced the following conclusions:—It deserves as a rule the preference over all other antipyretics, but it fails in certain cases in which other remedies produce valuable results. Apart from its antipyretic action, it increases the excretions from the skin and kidneys, and may consequently prove useful in the treatment of some cases of dropsy. The unpleasant nervous symptoms which sometimes supervene during its employment usually disappear spontaneously, and are not dangerous.—*Archiv der Heilkunde*, 1877.

Part Fourth.

MEDICAL NEWS.

DR MATTHEWS DUNCAN.

By the departure of this distinguished teacher and physician to occupy the chair of Gynæcology, vacated by the resignation of Dr Greenhalgh, at St Bartholomew's, the Edinburgh school sustains a great loss. Eminent alike as a scientific obstetrician, an able lecturer, and a shrewd practitioner, he will be missed in many ways, as well as at all the gatherings of the profession, societies, college meetings, and festive clubs. To this Journal, to the pages of which he has for years been a frequent and always welcome contributor, his departure will be a great loss. He leaves Edinburgh regretted and respected, with the warmest good wishes of all his professional brethren.

HERTFORD BRITISH HOSPITAL OF PARIS.—On 24th August, the anniversary of the death of the late Lord Hertford, Sir Richard and Lady Wallace laid the foundation-stone of the new hospital now being erected in the Rue de Villiers (outside the fortifications), which a year hence will supersede the premises at present occupied in the Route de la Révolte. From the intimate connexion which the origin of the Hertford British Hospital had with the two sieges of Paris, and with the memorable services then rendered by its founder to his countrymen within the suffering city, the event has an interest peculiar and historical, in addition to that belonging to it as giving the seal of permanence to a costly and invaluable undertaking on behalf of the British sick poor of Paris. The new hospital will contain thirty-four beds, and be provided with operating room, baths, gardens, chapel, reception-rooms for out-patients, and every appliance required for the accommodation and treatment of medical and surgical patients of both sexes and all ages.

After an impressive extemporary prayer by the Rev. Mr Spaight, assistant-minister of the English church in the Rue Marbœuf, Sir Richard deposited within the prepared receptacle in the stone an inscribed brass plate and a series of English and French coins of the current year. Having laid the mortar, and suitably used the trowel and mallet, he handed the tools to Lady Wallace, who similarly applied them. Sir Richard then invited Lady Cormack, and afterwards the members of the hospital-staff, to participate in the ceremony, by striking the stone with the mallet.

Sir Richard Wallace then spoke to the following effect:—My friends, Lady Wallace and I have very great satisfaction in meeting you here to-day, to lay the foundation stone of this hospital in memory of the late Marquis of Hertford, that noble and kind-hearted man whose name it is to bear, and of whose death this is the anniversary. Though to-day we are laying the foundation-stone of a new building, we are not founding a new institution. The Hertford British Hospital has already existed for about six years. It grew up, so to speak, during the sieges of Paris. In its origin it was an appendage to the English ambulance, which had its headquarters in the Rue d'Aguesseau. Early in January 1871, during the most distressing period of the German siege, the want of hospital accommodation for poor British subjects was so urgent that I opened wards for their reception immediately adjoining those occupied in the Rue d'Aguesseau by the sick and wounded soldiers. There also, from 1st January to the end of July 1871, non-resident patients received daily gratuitous advice and medicines. On the 1st August 1871, the civil patients, and our remaining wounded soldiers, were transferred to a commodious house hired for their reception at Levallois-Perrot, whence, on the 15th November 1871, removal took place to the premises we now occupy, in the Route de la Révolte. My idea in creating the Hertford British Hospital has been to give to the British sick poor of this city a comfortable

hometo which they can come to have their maladies cured or alleviated under the care of physicians and nurses of their own country, and in which provision is made for the consolations of religion, each patient having the free exercise of his own faith, with access to his own minister. It is with much satisfaction that I hear from all quarters of the great reputation which our hospital has already acquired; but perhaps I ought to a certain extent to qualify this remark. We have received—without knowing it at the time—as resident patients one or two persons who came from London expressly to be received for treatment; and occasionally, persons well able to pay for medical advice and medicine have been received as out-patients. Against these abuses of our institution I strongly protest. The Hertford British Hospital is for British subjects resident in Paris suffering from accidents or acute diseases, who are unable to pay for medical attendance at their own homes or in a *maison de santé*. There is another limitation of our sphere which does not seem to be generally understood. We do not offer an asylum to those who are permanently infirm from age or other causes, nor, except under very special circumstances, do we receive persons affected with incurable chronic diseases. Were we to do so, all our beds would very soon be permanently occupied, to the exclusion of the class of patients for whom our institution is intended. The physicians of the hospital, to whom the selection of suitable patients is solely confided, entirely agree with me in the absolute necessity of the limitations to which I have now adverted; and I trust they may always exercise the utmost care in enforcing them. This task is not easy, and will require constant vigilance. I avail myself of this opportunity of expressing how deeply grateful I feel to the physicians of the hospital, my excellent friends Sir John Rose Cormack and the Hon. Alan Herbert, for the cordial manner in which they have entered into all my views and carried out all my wishes—for the science, skill, vigilance, and humanity with which they have discharged their professional duties. I have also to thank the Lady Superintendent and the entire staff for the kind and efficient manner in which they have supported me and carried out the instructions of the physicians. Contemplating our past success, we may hopefully look to the future. I am thankful to God that the late Marquis of Hertford has enabled me to found this hospital and to make it permanently independent of extraneous contributions. May God Almighty bless this undertaking, and make it all that Lady Wallace and I wish it to be to the suffering poor of Paris.

Sir Richard then (in French) addressed the architect, contractors, and workmen. He said: Mr Sanson and Gentlemen—I have much pleasure in meeting you here to-day, as it gives me an opportunity of thanking you for the activity with which you are carrying on the works, and of expressing the hope that you will proceed in the same spirit till they are completed. You are all

aware that the hospital you are now building is destined exclusively for the British; but perhaps some of you do not know that there is in London an hospital exclusively for the French, which is chiefly supported by the voluntary contributions of the English. I mention this, for it shows the love which we English bear to the French nation. It is a love which has manifested itself in many ways. Fortunately, the Hertford British Hospital will be independent of contributions from the public. It is well to remember that although we do not admit the French to our hospital, the beds occupied in it set free an equal number of beds in French hospitals—institutions supported by the community. Let us then try as far as we can to bear one another's burdens. It is in that spirit of mutual support that I ask you to go on helping me as you have hitherto done by zealously proceeding with your work.

Sir John Rose Cormack said: Sir Richard, for myself and my colleague, Dr Herbert, I crave permission to say a few words, particularly in relation to the seasonable and kind remarks you have just addressed to this meeting and to ourselves. First of all, we desire to express our intense satisfaction at meeting you and Lady Wallace here, and being invited to participate with you in the auspicious ceremony of this day. The laying the foundation-stone is a great and pleasant event; and it is equally a source of pleasure to observe that the progress already made in the building justifies the expectation that about this time next year the opening of the new hospital may take place. We sincerely thank you for the unlimited confidence you place in us in respect both to the management and the selection of our patients. To that confidence, and the powers we exercise in virtue of it, we attribute much of the success which has hitherto marked the working of the hospital. The hospital never was in a more efficient state than at the present moment—a circumstance attributable in no small degree to the thorough manner in which our Lady Superintendent, Miss Smith, understands and performs her duties to physicians, nurses, and patients—no easy task, seeing that our present house was not built for the accommodation of the sick. As we receive patients of both sexes and all ages,—from infancy to old age,—medical and surgical patients, and not unfrequently persons troublesome to deal with on account of their diseases being contagious, such as diphtheria, or disturbing, such as delirium tremens, we have often difficulties to grapple with incident to the building. To the Lady Superintendent, to our able Resident Clinical Assistant, Dr Greenway, to each nurse individually, and to the entire staff, Dr Herbert and I give hearty thanks for the devotion and efficiency with which they discharge their respective duties. Let me conclude by repeating the prayer already offered up by all here present, that God Almighty may ever bless you, Sir Richard, Lady Wallace, and the Hertford British Hospital of Paris.

Mr Sanson said (in French): Sir Richard, permit me as a

Frenchman to say that your character and conduct inspires universal admiration and gratitude in France. You are the true incarnation of charity. I feel deeply honoured by your selecting me to be the architect of this monument to the memory of the Marquis of Hertford, which is also an hospital for your fellow-countrymen, foreigners in this great city, to the citizens of which your kindness has been so great. You may rely on me and on the contractors and workmen proceeding with the utmost zeal and activity in our building operations.

The proceedings terminated by Sir Richard handing a sum of money to Mr Sanson for distribution among the workmen. The ceremony, in consideration of the anniversary it marked, was conducted with the least possible demonstration; but, nevertheless, the fineness of the weather, and the display of the English and French flags on the rising walls, had caused a considerable crowd to assemble outside the enclosure before five P.M., the hour at which the proceedings commenced.

OBITUARY.

THE LATE DR ROBERT TURNER.—We regret to record the death of Dr Robert Turner of Keith, which took place at his residence there on Sunday the 9th September.

Up to about eight months ago Dr Turner was engaged in the active duties of his profession, full of health and vigour, with every promise of many years of usefulness before him, as he was only in his sixty-fourth year. But an attack of erysipelas, to which he was somewhat liable, seized his face, mouth, and throat about that time with quite extraordinary severity, and for some time his life was despaired of. He recovered slowly from this attack, however, and only with health and constitution completely shattered. There had occurred so much sloughing and ulceration of the mouth and throat in connexion with the above seizure, that ever afterwards the power of articulation was very imperfect. His intellect, however, was clear and active up to the last. He indeed seemed slowly improving till the beginning of August, when his condition changed greatly for the worse, and continued so till the end came.

Dr Turner's medical education was obtained partly at Aberdeen and partly in this city. He was a Member of the Royal College of Surgeons of London, and a Doctor of Medicine of the University of Aberdeen. He was a contemporary as a student as well as life-long correspondent of both Simpson and Bennett. He was a not unfrequent contributor to the pages of this journal, and he occasionally ventilated his views on medical and sanitary subjects in the public press, under his favourite *nom de plume* of "Gideon Gray." His services as a public lecturer were often asked and always frankly

given in Keith to contribute to the information or amusement of the members of various improvement societies.

Dr Turner was an enlightened and accomplished medical practitioner, enthusiastically fond of his profession, and devoted to it and to everything that tended to elevate or improve it. But he was not a mere doctor. He took pains to acquaint himself with general literature and science, and there were few better-informed men to be found in a district rather famed for hard heads and love of knowledge. Possessed of a singularly retentive and well-stored memory, scarcely a subject could turn up in conversation that he could not illustrate by an apt quotation or a racy and telling anecdote.

For more than forty years he practised in Keith, and during that time his name has been a household word in the place, and himself deservedly the object of much respect and esteem. He took a keen interest in everything that bore upon the health and best interests of the people, and did his utmost to advance them. One of the objects which he had laboured long for he had the melancholy satisfaction of seeing fairly set afloat just before he died, viz., a cottage hospital for Keith—a much needed want. He also was an active member and at least once president of the North of Scotland Medical Association. He was a member of the Medico-Chirurgical Society, also of the Obstetrical Society of Edinburgh, and last year was elected Examiner in Midwifery and Medical Jurisprudence in the University of Aberdeen. But his health never allowed him to act in the latter capacity.

In disposition Dr Turner was amiable and obliging to an extreme degree. He spared neither health nor strength in his endeavours to alleviate suffering and cure disease. Those only who know the inhospitable climate and other drawbacks of the district in which he laboured so long and so well, can adequately appreciate the amount of self-denial, privation, and toil that was crushed into his thirty-four years of service in the cause of humanity. Yet by day and by night the burden was cheerfully borne without a grumble or the slightest expression of dissatisfaction or disappointment. As a natural consequence, every year added to the esteem and regard in which he was held, not only in the immediate neighbourhood of Keith, but also throughout the north of Scotland. Few lives have been better spent than that of the subject of this notice, and his death leaves a blank in the ranks of our profession in the north of Scotland that will not be very easy to fill.

Dr Turner, in his own family, was severely trained in the school of affliction, having seen two amiable daughters and a promising son grow up to womanhood and manhood, and then be called away. He leaves a widow, two daughters, and five sons to mourn his loss. His eldest son, Dr Robert Shand Turner, has for about ten years assisted his father in practice, and now succeeds him.

DR NATHAN SMITH of Baltimore died at the age of 80 on 3d July 1877. He has been a teacher of Anatomy and Surgery since 1824, and his name is well known in relation to many surgical advances; especially in the manipulative treatment of dislocations.

PUBLICATIONS RECEIVED.

- ROBERT BENTLEY and HENRY TRIMEN, — Medicinal Plants. Part XXIV. London, 1877.
- FRANCIS BERTIER, M.D., — The Spas of Aix-les Bains and Marlioz. London, 1877.
- V. P. GIBNEY, M.D., — The Strumous Element in the Etiology of Joint Disease. New York, 1877.
- EDOUARD GOETZ, — Etude sur le Spina Ventosa, accompagnée d'Observations Recueillies à l'Hôpital Sainte-Eugénie et à l'Hôpital des Enfants-Assistés. Pp. 119. Prix, 2 fr. 50 c. J. B. Baillière et fils. Paris, 1877.
- W. W. KEEN, M.D., — The Toner Lectures. Lecture V. Washington, 1877.
- JOHN MILLAR, L.R.C.P. Ed., — Hints on Insanity. London, 1877.
- WM. A. MILLER, M.D., — Elements of Chemistry. London, 1877.
- M. M. PATRISON MUIR, F.R.S.E., — A System of Volumetric Analysis. London, 1877.
- W. K. PARKER and G. T. BETTANY, — Morphology of the Skull. London, 1877.
- T. B. PEACOCK, M.D., — On the Prognosis in Cases of Valvular Disease of the Heart. London, 1877.

PERIODICALS RECEIVED.

- American Journal of the Medical Sciences, — July.
- American Practitioner, — July-Aug.
- Analyst, — Aug.-Sept.
- Annales de Gynécologie, — Aug.
- Annales d'Oculistique, — July.
- Annali Universali di Medicina, — July.
- Annali Universali di Medicina e Chirurgia, — July-Aug.
- Archives Générales de Médecine, — Aug.-Sept.
- Archives of Dermatology, — July.
- Archives de Tocologie, — Aug.-Sept.
- Berliner Klin. Wochenschrift, — July 30-Sept. 17.
- Births, Deaths, and Marriages, Monthly Return of, — July. Quarterly Return, — June.
- Boston Medical and Surgical Journal, — July 19-Sept. 6.
- British Medical Journal, — July 28-Sept. 22.
- Bulletin Général de Thérapentique, — July 30-Sept. 15.
- Centralblatt für Chirurgie, — July 28-Sept. 15.
- Chicago Journal, — Aug.
- Commentario Clinico di Pisa, — July 31-Aug. 31.
- Detroit Medical Journal, — Aug.-Sept.
- Dublin Journal of Medical Science, — Aug.-Sept.
- France Médicale, — July 25-Sept. 15.
- Gazetta Medica da Bahia, — June-July.
- Gazette des Hôpitaux, — July 24-Sept. 20.
- Gazette Hebdomadaire de Médecine, — July 27-Sept. 14.
- Gazette Médicale de Paris, — July 23-Sept. 15.
- Gazette Médicale de Strasbourg, — Aug. 1-Sept. 1.
- Glasgow Medical Journal, — July.
- Indian Medical Gazette, — July-Aug.
- Journal de Thérapentique, — July 25-Sept. 10.
- Journal of Anatomy and Physiology, — July.
- Journal of Nervous and Mental Disease, — July.
- Klinische Monatsblätter für Augenheilkunde, — Aug.-Sept.
- L'Année Médicale, — July-Aug.
- London Medical Record, — Aug.-Sept.
- Medical and Surgical Reporter, — June 2-Sept. 1.
- Medical Press and Circular, — July 25-Sept. 19.
- Medical Times and Gazette, — July 28-Sept. 22.
- Medizinische Jahrbücher, — Part 3.
- New Orleans Medical and Surgical Journal, — Sept. 1.
- New Preparations, — July.
- New York Medical Journal, — Aug.-Sept.
- Nordiskt Medicinskt Arkiv, — Band 9.
- Obstetrical Journal, — Sept.; American Supplement, — July.
- Onderzoekingen gedaan in het Physiologisch Laboratorium der Utrechtsche Hoogeschoole, Derde Reeks, Aflevering 2.
- Philadelphia Medical and Surgical Reporter, — July 28-Aug. 11.
- Philadelphia Medical Times, — July 21-Sept. 1.
- Practitioner, — Aug.-Sept.
- Progrès Médical, — July 28-Sept. 15.
- Recueil d'Ophthalmologie, — July.
- Revue de Thérapentique Médico-Chirurgicale, — Aug. 1-Sept. 15.
- Sanitarian, — Aug.-Sept.
- Sanitary Record, — July 27-Sept. 21.
- Trade Marks, — Sept. 10.
- Virchow's Archiv, — July-Aug.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Pleural Effusion, its Diagnosis and Treatment.*

By JOHN HADDON, M.A., M.D.

IF there be a disease which is difficult of detection, of frequent occurrence, a common cause of suffering and death, and as to the treatment of which opinion is divided, it must deserve the most careful consideration of every practitioner. All this may be truly said of effusion into the pleural cavity.

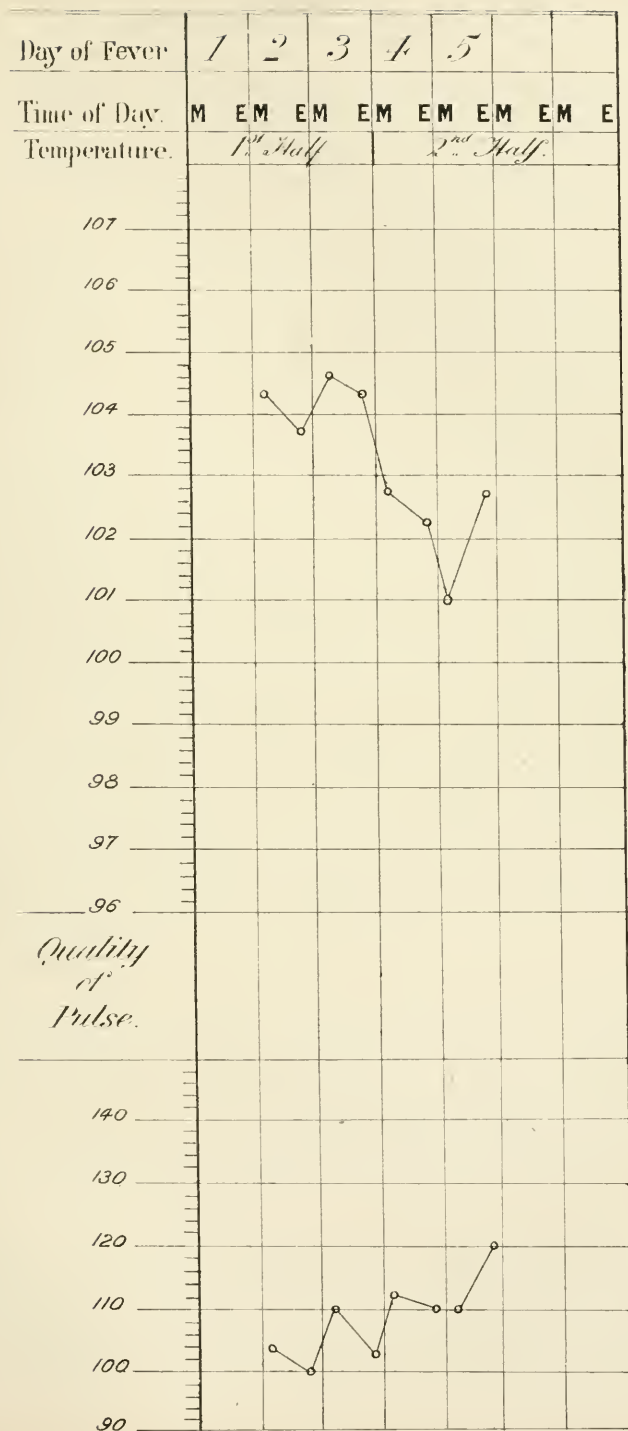
Effusion most commonly occurs as the result of inflammation of the pleura. Pleurisy may exist without any affection of the lung substance, but it is most frequently met with in conjunction with more or less pneumonia; and, the pneumonia being most marked, and sufficient to give rise to most of the symptoms observed, the pleuritic mischief is apt to be overlooked at the beginning of the attack. The temperature may fall, as is usual in pneumonia, after the fifth day, but the lung sounds do not clear up, as they should do in uncomplicated pneumonia; soon the temperature begins to rise again, and in most cases, though not in all, sooner or later, very frequently later, it is discovered that there is fluid in the pleural cavity. In a case of uncomplicated pleurisy, our attention is concentrated on the pleura, and changes in it are carefully watched, while every one will admit that the sooner our attention can be directed to the occurrence of pleuritic mischief in a case of pneumonia, the better for the patient. I suppose no one now-a-days would think of attending a case of pneumonia without observing the temperature, which rises suddenly, and shows well-marked morning remissions, with evening exacerbations, until the crisis occurs. In most diseases the temperature is highest in the evening; but in a paper published in the *Edinburgh Medical Journal* for March 1873, I directed attention to the fact, that in some cases of acute rheumatism in which the heart was affected, there was either a fall of temperature in the evening, or a want of the evening rise; and I ventured to suggest that this peculiarity might indicate incipient cardiac complication. I have observed the same peculiarity of temperature in meningitis, in some cases of typhoid fever, and in pneumonia complicated with pleurisy, and have come to regard it as pointing to the beginning of inflammation in some serous

membrane, during the course of other diseases. The chart of temperature and pulse in a case of pleuro-pneumonia recorded by C. S. Ticehurst, L.R.C.P., in the *British Medical Journal* of 22d July 1876, shows to what I refer, and it may be seen that the pulse-curve shows the same peculiarity. If this supposition be correct, then we have in the thermometer a very valuable aid to the detection of pleurisy in cases of pneumonia, at a time when it may escape any other means of diagnosis. In short, if in a case of pneumonia we see the evening temperature lower than that of the morning, or without the usual exacerbation, during the progress of the disease, it behoves us to be specially careful in our examination of the chest, and to look out for pleuritic complications. Only those who have carefully watched cases of pleuro-pneumonia can understand the difficulty, more especially in children, of saying when effusion begins, what signs are due to effusion, and what to consolidation of lung-substance. No doubt there are cases in which everything is straightforward, and, with our text-books as guides, we cannot go wrong, while, on the other hand, cases occur which baffle the most acute diagnostician, and he will hardly hazard an opinion, but recommend an exploratory puncture to ascertain their real nature.

I need not here enter into any examination of the physical signs and symptoms of pleurisy, but let us suppose that we have to do with a case in which effusion has just begun, and consider the treatment which is recommended at the present day. To ascertain the present teaching on this subject, I referred to the last published handbook of medicine. In the preface to the 2d edition, which was published last year, I find it stated that it has been "brought up as nearly as possible to the existing state of knowledge and observation." In this handbook we are recommended to treat moderate effusion by strapping the affected side so as, if possible, to prevent any movement of the ribs. If there be much effusion, counter irritation over the chest, with blisters, or iodine liniment, full doses of iodide of potassium and infusion of digitalis, with laxatives and hot baths, are the means advocated. The indications given forappings are those laid down by the late Dr Austic in *Reynolds's System of Medicine*, viz., to tap:—

1. In all cases of pleurisy, at whatever date, where the fluid is so copious as to fill one pleura, and begins to compress the lung of the other side.
2. In all cases of double pleurisy, when the total fluid may be said to occupy a space equal to half the united dimensions of the two pleural cavities.
3. In all cases where, the effusion being large, there have been one or more fits of orthopnea.
4. In all cases where the fluid can be suspected to be pus, an exploratory puncture must be made; if purulent, the fluid must be let out.
5. In all cases where a pleuritic effusion, occupying as much as half of the pleural cavity, has existed so long as one month, and shows no sign of progressive absorption.

Now, with due deference, I submit that such directions leave us without any sound principle to guide our practice.



To express an opinion as to any line of treatment, it is necessary to know what is the natural course of the particular disease. Thus, knowing that the fever with which we have pneumonia, as a rule, runs its course in five days, and ends suddenly, we do not adopt any active treatment unless there is urgency in the case. In pleurisy, on the other hand, when effusion begins, we know that the fluid will continue to be poured out for a certain time. We can trace its accumulation, and in some cases mark the exact limit at which it stops. From day to day we either see no change in the fluid, or it gradually diminishes until it has quite gone. When it is not absorbed, our patient does not improve, but is harassed with a dry cough, hectic fever may set in, and having reached this stage, we cannot look for anything better than a very slow recovery. Such being the natural course of a pleuritic effusion, what ought to be our treatment?

I admit that there is a close analogy between an effusion into a joint, such as that of the knee, and a pleuritic effusion; but in the treatment of either affection, we must not forget that rest in one position for a length of time may not be harmless. Thus, while we have an effusion into the pleura, we have more or less of the lung in disuse. To be out of use, is to be in danger of becoming useless; and so, in adopting any treatment of the effusion, we must not forget the important organ which the presence of the fluid endangers. The best result that can be looked for is the speedy absorption of the fluid effused.

The early history of pleuritic effusions is somewhat obscure, but it is probable that they vary in different cases according to the diathesis and general health of the individual. A blister applied to the skin will in one case cause a thin, watery, serous effusion, in another a highly coagulable serum, and in a third the effusion may be purulent almost as soon as it is seen; and so it is reasonable to suppose that we may have different kinds of fluid effused into the pleural cavity.

CASE I.—In the case of a young woman, effusion began on 28th February, and entirely filled the left side on 4th March, causing orthopnoea. On 5th March the physical signs being the same as on the 4th, and the general state if anything rather better, the temperature being 102° at noon, I removed 32 oz. of serum by the bottle-aspirator. She was at once relieved, slept well during the night, lying down. The fluid did not re-accumulate, and convalescence was uninterrupted.

CASE II.—A man, 37 years of age, whom I saw on 8th July, and who had been ill from 2d July, had pleurisy and pericarditis. The fluid on 13th July was an inch and a half above the angle of the scapula. It increased till the dulness remained stationary about the spine of the scapula, and on 20th July I withdrew 30 oz.

of clear serum with the bottle-aspirator. There was no re-accumulation, but his convalescence was slow.

CASE III.—In a boy whom I saw six weeks after the commencement of scarlet-fever, and probably three weeks from the beginning of effusion, I found the left chest full of pus.

CASE IV.—In a delicate girl who had pleuro-pneumonia, I found pus in the pleura on the 18th day from the beginning of the attack.

CASE V.—In a man, aged 29 years, I found a sero-purulent fluid on the thirty sixth day from the beginning of an attack of pleuro-pneumonia.

If then the fluid is not purulent at first, the great danger of its becoming so, points to the necessity for early removal; and to allow an effusion to remain so long as a month would, to my mind, be not only hazardous, but culpable.

When in pleurisy we find that effusion ceases, we may conclude that an effort is being made, or about to be made, to remove it by the natural process of absorption. While the effusion is progressing no good would be likely to follow aspiration, and there is no call for interference unless the fluid is so copious as to render its removal necessary for the safety of the patient. When absorption is taking place it is astonishing how quickly fluid can be removed. If absorption is not going on naturally, I think we have good reason to be sceptical as to the power of any remedies to originate that process; and therefore it seems right, so soon as we have learned that effusion has ceased, and that absorption is not going on, that the aspirator should be used, and as much as possible of the fluid removed. As to the time at which we should operate after effusion has ceased, opinions may vary, but I believe that those who operate soonest will have the best results. When one pleura is full, as indicated by universal dulness, I should be inclined to repeat the treatment mentioned in Case I., viz., if there were no urgent symptoms, allow the fluid to remain twenty-four hours before operating. In any case, if absorption was not active, and unmistakable, on the second day from the cessation of effusion, I would use the aspirator.

I am not aware of any cases which have been published showing that early removal has in any way interfered with the recovery of a case of pleuritic effusion, nor am I aware of any observations as to the length of time for which a lung may be flattened against the spine by effused fluid without being rendered unable to resume its function; but it is reasonable to suppose that the earlier the fluid is removed, and the sooner the lung is allowed to expand into use, the less danger there will be in removing either a part, or the whole of the fluid effused. So I think we may conclude, that the earlier

the aspirator is used, the less is the danger from the operation itself, and from what I have observed or read, the greater is the chance of a speedy and perfect recovery. The dangers from fluid remaining in the pleural cavity are—1. That the fluid becomes purulent; 2. That adhesions may be formed which bind the lung so as to render it for ever useless; and 3. That the pleura itself becomes so disorganized that it cannot again resume its proper function; and surely they are sufficient to deter every conscientious practitioner, from allowing any noticeable quantity of fluid to remain in the thorax, whence it can be removed with such safety, ease, and expedition. If after the first operation re-accumulation should take place, the same principle ought to guide our practice. If this principle of treatment was universally adopted, we would hear of fewer cases of death from empyema. The general practitioner, knowing that more than expectant treatment was required at his hands, would, if he had any difficulty in diagnosis, ask for assistance early in the case, knowing the dangers of delay.

Having now considered the principle that ought to guide our practice in acute effusion, let us suppose that in a case aspirated, either early in its history or late, the fluid is found to be purulent, and consider what course we ought to pursue.

Looking again at nature's attempt to restore health, we find that the best possible course is when an opening is established through the thoracic wall, allowing the pus to drain away. When an opening is effected through the parietes I believe it most frequently occurs in front, probably because in that situation the pleura is thinner, the bulk of the fibrin having been deposited on the posterior wall owing to the decubitus of the patient. Before however establishing an opening in the thoracic wall, I think the aspirator ought to be tried.

In case III., where the fluid was purulent three weeks from the beginning of effusion, aspiration was twice performed, and he made a fair recovery.

In case IV. I was allowed to take away only about seven ounces, and she recovered, although with retraction of the side, causing considerable deformity.

In case V. about six ounces of sero-purulent fluid was removed by aspiration on the thirty-sixth day, and his recovery was perfect.

These, with many cases which might be cited, are sufficient to prove that purulent collections in the pleural cavity may be successfully treated by the aspirator alone. Other cases occur, however, in which the fluid is no sooner removed, than it is poured out afresh; so that aspiration gives but temporary relief, and is unable to prevent death. In such cases, no course is left but to imitate nature, and open the chest-wall, treating the case as one of ordinary chronic abscess. As to the best method to pursue when such a course has been resolved upon, there seems room for considerable diversity of

opinion, owing probably to the differences in the individual cases met with. Some consider the entrance of air dangerous, while others regard it as a matter of no importance whatever, and both parties speak from experience in the treatment of such cases. Some advocate one opening, while others say that two give much better results; and again both speak from experience. When men of eminence are divided in opinion, there must be some truth on both sides; but I think the best plan would be to err on the side of caution, and put a drainage-tube in through one opening, and out through another, under antiseptic conditions, and dress with the strictest regard to Lister's injunctions. All surgery is not antiseptic that goes by that name; but when we are more expert, and careful in imitating Lister, his treatment will no doubt be as successful in purulent effusion into the pleura, as it is in psoas, or any other abscess.

I would again point to the necessity for carefully watching every case of pneumonia, to detect as early as possible any pleuritic complication, and to be prepared at the proper time to use the aspirator boldly, fearing nothing so much as that our timidity may be the cause of the prolonged suffering and even death of our patient. Albuminous expectoration, which, by the way, is a sure sign that the lung, long in disuse, is expanding, and may be met with apart from paracentesis; and syncope, with any other possible dangers, are far more likely to follow late, than early aspiration.

In conclusion, I would express the hope that when every practitioner is able to diagnose, and treat acute pleurisy as it ought to be treated, cases of empyema, such as our Medical Journals now contain in abundance, will become so rare, that the rising generation will read of them nowhere, except in the records of the past.

ARTICLE II.—*Case of Molluscous Tumour of the Ear, complicated with Polypi and a Fistulous Opening behind the Auricle communicating with the Internal Ear, and stretching up to a Cavity on the Temple two inches above the Auricle under the Muscular Structures.* By J. J. KIRK DUNCANSON.

MOLLUSCOUS tumour of the ear does not appear to be of very frequent occurrence in the present day. In the current literature, so far as that is accessible to me, I do not find any notice of it. Some of our standard works do not mention it. Toynbee describes and gives figures representing the disease and its effects upon the temporal bone from specimens obtained after death. His description is as follows:—

“Molluscous tumours are sometimes formed in the external meatus, and lead to very serious results. I first met with these tumours when making dissections of the ear, and several specimens

are in my possession which illustrate the nature of the disease. These excrescences seem to have their origin in the dermis of the meatus, and they gradually increase in size, so as not only to fill the whole of the meatus, but to encroach upon and cause absorption of the bone. Thus, in some instances, the lower osseous wall of the meatus is affected, and in part absorbed, while in others the tumour extends upwards, and the whole of the upper wall of the meatus is effaced by the pressure exerted upon it. I have met with cases in which the tumour has extended into the cerebral cavity. These cases are liable to be overlooked, and classed with those in which there is a simple accumulation of epidermis in the meatus. The treatment of molluscos tumours consists in removing the large mass of scales contained in the tumour, and afterwards syringing the meatus abundantly with warm water twice or thrice daily."

My patient, a young woman aged twenty-five years, was born and brought up in the country by healthy parents. Until recently, she has been a domestic servant in Edinburgh. The patient was sent to me by the late Dr Warburton Begbie. For the last two years she has suffered much pain. I will give the history of her sufferings nearly in her own words, written out at my request by herself, up to the time she came under my notice.

"First I felt a twitching in the one side of my face from the eye to the chin, which lasted from February 1874 to the beginning of July of the same year. It then swelled up, and I thought it was a gum-boil. The swelling lasted three weeks, then I had no power in the one side of my face; after that Dr A. gave me galvanic shocks for about two months; then he tried fly blisters, but they did no good. I went to Dr B., and he ordered mercury; I was to take it till my mouth turned sore. I took it for about six weeks, and it never affected the mouth. About a fortnight or three weeks after, I stopped taking the mercury. The beginning of February 1875 I first felt my ear painful; it was very slight at first. I felt a severe pain for a few minutes, then I did not feel it for a week or two again. There was always a little discharge came out of the ear from the time I felt it painful first. About the end of March the ear got worse, and was very painful. It swelled up at the back of the ear, and was very much inflamed. About the middle of April I got very giddy, and was not able for my work. The ear was very much swollen, and a small red thing sticking out at the open of the ear. My master sent for Dr C., who said that, after the swelling fell, the small red thing would have to be burned down. I went home, and about a fortnight after that the swelling at the back of the ear bursted, and a great deal of discharge came from it. It always swelled up and bursted again till the beginning of June, when I went to the Infirmary, and saw Dr D. The growth was still sticking out of the ear. The doctor ordered me to blister all the one side of my head with painting blisters, which I did for

about six weeks, till a small piece of bone came out of the ear. I always felt a severe stinging pain go through my ear with a buzz like a bee. For a while I could not hold my head up, and had always to have something at the back for it to lean on."

C. B. came under my notice 15th July 1875. The patient was flushed, and exhausted with the fatigue of her morning's journey. She brought, rolled up in a piece of paper, masses of dried-up epidermal-looking scales with a very foetid odour, which had come out of her ear during the last few days. Pulse hurried. Patient thirsty. On examination of the right ear, a large mass of polypi was seen projecting from the external auditory meatus, whilst a smaller mass was protruding from an opening over the mastoid behind the auricle. There was much swelling, with a feeling of bogginess all around the auricle. A distinctly fluctuating feeling was felt about two inches above the auricle, which, on being pressed, pus escaped by the opening over the mastoid. A probe passed freely on the bone up to this pus-containing cavity. The patient heard no sounds on the right side of the head. The tuning-fork, sounding, placed on the vertex, nose, and teeth, is heard in the right ear. There is great pain all round and in the right ear. The right eye is constantly watering. The polypi were removed, and the external auditory meatus and the opening over the mastoid were ordered to be frequently syringed with a weak tepid solution of Condy's disinfecting fluid red. Patient to take inwardly ten drops of the tincture of the perchloride of iron every four hours.

19th July.—The opening behind the auricle over the mastoid has closed up; did so on the 17th. A large polypus is obstructing the external auditory meatus. The cicatrix behind the auricle was freely laid open, and the sinus leading up to the cavity above the auricle probed. A piece of lint was inserted to keep the lips of the wound behind the auricle open, after the cavity had been freely emptied and washed out by the syringe. The polypus was removed from the external auditory meatus and the passage thoroughly syringed, masses of flaky foetid epidermal-looking masses escaping. The opening behind auricle communicates with the meatus.

21st July.—Polypus has again sprung up from the walls of the external auditory meatus, but does not prevent the use of the syringe. Wound behind auricle open, and discharging freely. Patient's general health not much improved. The air does not pass into the external auditory meatus through the middle ear when using Politzer's method or Eustachian catheter. Syringing still gives the same flaky masses.

24th July.—Removed the polypus. Not so much discharge from the opening over the mastoid. There is some foreign substance glistening in the upper posterior wall of the external auditory meatus, deep down into the temporal bone.

28th July.—Polypus not springing up so rapidly as previously. Syringed out great masses of the flaky epidermal-looking substance. Stench almost overpowering. The discharge from the external auditory meatus had been more profuse since last visit than for some time previous. Not so much from opening over the mastoid.

31st July.—Wound behind auricle over the mastoid healing up. Patient does not suffer so much pain in the ear now. Still the flaky discharge.

4th August.—Wound behind auricle closed. The pain and bogginess are gone. Can make out, by the aid of the aural speculum and mirror, the anterior segment of the membrana tympani. Still something foreign in the posterior wall. Patient feels much better; can move the muscles of the right side of the face a little.

10th August.—Patient still improves in every respect; not so much discharge from right external auditory meatus. To drop into the external auditory meatus a mixture of the spiritus vini rectificatissimi of the German Pharmacopœia and rose-water, equal parts.

18th August.—The pain, swelling, and redness have returned behind the auricle, but lower down than before. The pain commenced on Sabbath, and was then very severe, but has since subsided a little. Syringing out the external auditory meatus is very painful, but as a larger mass of the epidermal-looking substance is coming away, the syringing was as gently as possible persevered with. At last a huge mass, the size of a small walnut, was syringed out, causing a good deal of pain. The water used in syringing escaped through the middle ear and Eustachian tube into the mouth and nostril. The mass consisted of layers of white glistening scales arranged one over the other, the inner layers of a more pearly lustre, the outer yellowish, broken down, and stinking horribly. The patient was more overcome by the smell than the pain, and said she felt the smell in the back of her nose, and tasted something horrid in her mouth. Patient felt greatly relieved after the admission of fresh air into the room, and resting some time. To wash out the meatus with a weak solution of Condy's fluid, and go on taking the iron.

24th August.—Swelling and redness have almost disappeared from behind the ear. Pain has entirely gone. There is still a considerable foetid discharge from the meatus, with broken-down flakes. To use a weak solution of sodæ bicarb. to syringe out the meatus with.

4th September.—No more pain, still a slight discharge; on syringing here, some broken-down flakes were washed out. The membranous part of the external auditory meatus is becoming more like the same part of the other ear. On using the speculum auris and mirror, one looks into a large black space posteriorly and superiorly, the anterior segment of the membrana tympani, with

the short process of the malleus, can be seen. The wound behind the auricle over the mastoid is perfectly healed up, and the structures above and about the ear seem and feel normal. Patient generally much improved. Face when laughing natural on both sides. To use a weak solution of Condyl's fluid to syringe out the ear with.

2d October.—Still improving, working out of doors at home. No more of the drumhead can be seen as yet.

13th November.—Occasional pains passing through the right ear; discharge has ceased for some time now. View of drumhead as on 4th September.

18th December.—Patient has not felt so well of late. There exists a swelling below the right eye, with a constant twitching of the right lower eyelid; complains of shooting pains on left side of face, neck, and shoulders. Has lately been working for many hours at a time in a close room where many others were learning dressmaking. To give up the long hours and return to her home in the country. Gave her Easton's syrup, thirty drops three times a day in water. Air passes freely from tympanum into the meatus.

8th January 1876.—Patient now quite well, and returning to domestic service; has to go to London, to a situation there. To let me know if any return of the pain and discharge from the ear take place. No such thing has occurred.

The description of this case is very long, but the obscurity of the disease, and the fact that it is seldom met with, may excuse the length of my story, when compared with the following case of Mr Toynbee's; but Mr Toynbee was a master of his art:—"Case. *Molluscos tumour in the external meatus; discharge from the ear.*—Mr G., between 40 and 50, consulted me for a discharge from the right ear, accompanied by deafness. On examination, the meatus was observed to be nearly full of a white caseous-looking matter, from which oozed a discharge. By persevering use of the syringe, aided by the forceps, a large white mass was removed, which was found to consist of layers of white matter composed of large scales, similar to those of other molluscos tumours. On the removal of the mass the discharge disappeared." The history of some of the cases of molluscos tumour figured in Mr Toynbee's book would not have been so simple, but they are the figures of cases met with by Mr Toynbee in making post-mortem dissections of ears, of which he gives no previous history. The extent of the absorption and destruction of the bony wall of the meatus as well as the bony walls of the tympanum, I fear, I am glad I have not been able to ascertain in my case. In Mr Hinton's supplement to Mr Toynbee's work we find a fuller description of molluscos or sebaceous tumours of the ear, as Mr Toynbee latterly named them.

ARTICLE III.—*Practical Observations on some of the more common Diseases of Early Life.* By CHARLES BELL, M.D., Fellow of the Royal College of Physicians, Edinburgh, &c.

THE CONGENITAL DISEASES.

THE diseases of early life are of two kinds, the congenital and the post-partum. The congenital, as the name indicates, commence in utero, and are generally observable on the birth of the child. They are extremely interesting and important in their character, as on many of them depends the non-viability of the child. They have been divided into two classes, the one comprehending the diseases and malformations which in many instances may be remedied or removed by art, and are therefore quite compatible with extra-uterine life; the other class is irremediable by human means, and are incompatible with extra-uterine life, and in consequence they form a subject of interest more especially to the physiologist and pathologist. Our present object is, however, to consider and illustrate the first class, and to point out the proper mode of treatment in each form of disease. But in order that we may fully understand the character of those diseases and malformations, it is necessary that we should trace the development of the fœtus *in utero*, and have a thorough knowledge of the appearance and condition of the well-formed and healthy child at the full period of pregnancy.

Until near the end of the first month of gestation, the fœtus is merely a gelatinous semi-transparent flocculent amorphous mass of a grayish colour, measuring about the tenth of an inch in length. Burton compares it to a barley-corn; Casper, on the other hand, asserts that it is six lines in length; that the eyes are like little points; there is an outline of the mouth, and the heart and liver can be distinguished, and are large in proportion. Walter seems to support this description, and states that the liver is as heavy as the whole body.

The appearance of the ovum is more especially interesting, as miscarriages are extremely frequent at the end of the first month of gestation, and they are liable to be mistaken for the return of the catamenia; but their true nature becomes apparent by the excessive debility which is liable to accompany them, and by the character of the discharge, which always contains clots.

The Third Month.—At this period the fœtus measures 3 inches in length, and weighs, according to Dr Hamilton, three ounces. Casper asserts, however, that it weighs only one ounce. The features are still very imperfectly developed, and the eyelids are adherent. The head is large in proportion to the body, and is heavier. The umbilical cord is more fully developed, and the penis and clitoris are large, and the latter organ protrudes beyond

the nymphæ, which are thick and pulpy. The brain, the medulla oblongata, and the supra renal capsules can now be distinguished. The humerus is $3\frac{1}{2}$ lines in length, the ulna is the same, but the radius is only $2\frac{1}{2}$ lines. The femur and tibia are from 2 to 3 lines, and the fibula-like radius is only $2\frac{1}{2}$.

The Fourth Month.—According to Beck, the fœtus measures at this period from 4 to 6 inches in length, and weighs from 4 to 5 ounces; but Casper considers that it is only from 2 to 3 ounces. The skin, according to Billiard,¹ is transparent and colourless. The sex can now be distinguished without the aid of a glass. The heart is about the size of a millet seed, and is of a globular form. Haller asserts, however, that it is not apparent until the vena porta and some of the other large bloodvessels are formed, and that at first it resembles a large vein. The umbilicus is now situated near the pubis, and the intestines contain meconium of a grayish white appearance. The bones of the upper extremity are equal in length and measure about 8 lines, while those of the lower extremity are much shorter, the femur and tibia being only from 4 to 5 lines. There is no appearance of hair nor nails.

The Fifth Month.—In the opinion of some authors, the fœtus was a subject of interest merely in a physiological point of view, in consequence of the difference of opinion entertained by many in regard to the precise period when it becomes endowed with life. Hippocrates imagined that the male fœtus became animated thirty days after impregnation, but the female not until forty-two days. According to the ideas of the Stoics, the soul was not united to the body until the birth of the child, when respiration was fully established. Previous to this taking place, the child was considered merely as “partes viscerum matris.” Upon this principle the law of England seems to have been established, hence abortion produced previous to quickening is considered a minor crime, which was punished only by being put in the pillory; but when induced after quickening, it becomes a capital crime punishable by hanging. It is important to ascertain whether or not quickening has taken place, not only in a legal point of view, but on the grounds of humanity. This very important fact was formerly ascertained, according to law, by means of a jury of matrons chosen at random from among those who might be in the immediate neighbourhood of the court.

According to Casper, the fœtus in the fifth month measures from 10 to 11 inches in length, and weighs about 10 ounces; but Beck asserts that it measures only from 7 to 9 inches, and weighs from 7 to 10 ounces. The nails are now distinct, and there is a slight appearance of downy hair on the head. The bile is in considerable quantity, and the meconium has a green colour. The humerus measures from 13 to 15 lines, the radius 12, and the ulna 13. The whole of the bones of the lower extremity are of the same length, measuring about 12 lines. The external ear is

¹ *Op. cit.*, p. 62.

now formed. The brain is still a pulpy mass, without furrows or convolutions. From this time the length of the child affords a pretty good idea of the period of gestation, as its length in inches is double the number of months.

The Sixth Month.—There is considerable difference of opinion among forensic authors in regard to the size of the fœtus at this period. Casper states that it varies from 12 to 13 inches in length, and weighs from a pound to a pound and three-quarters. Beck asserts that it is only 10 inches in length, and weighs 2 pounds; and Taylor assigns from 9 to 10 inches as its length, and from 1 to 2 pounds as its weight. The skin has a purplish hue, and is pliant, especially in the palms of the hands and the soles of the feet. The scrotum is slightly developed, but the testicles are still in the abdomen. The clitoris is prominent, and the nymphæ are still protuberant. The eyelids are closed, and the eyes are covered with the membrana papillaris. There is a scanty appearance of eyelashes and eyebrows, as well as of hair on the head. The head is more in proportion with the body, and the brain is firmer. The liver is large, and the gall-bladder contains colourless bile. The lungs are small, pale, and compact, occupying the upper and posterior part of the chest. There is now a thin deposit of fat under the integuments. The heart and liver are comparatively large. The intestines contain only a small quantity of meconium. The bladder is small, and pyriform in shape.

Although all the organs are now more developed and perfect in shape, the fœtus is still not viable, and therefore delivery at this period is called abortion. Dr Radford asserts, however, that he had a case of a child born at the sixth month which lived two years; but he must have been deceived in regard to the period of gestation.

The Seventh Month.—The fœtus is now decidedly viable, and its organs are so far perfect that it can carry on extra-uterine life. Delivery at this stage of gestation, however, is called premature. The skin is of a rosy hue, and in general it is covered pretty thickly with subaceous matter of white colour. The eyelids are separated, and the membrana papillaris has disappeared. The hair is dark and more profuse. The nails are more complete, and of firmer texture. Its length is 15 inches, and its weight varies from 3 pounds to 3 pounds and a half. The centre of its length is nearer the sternum than the umbilicus. The fontanelles are large. The brain is firmer and slightly furrowed. The humerus is from 20 to 22 lines in length, and the radius is from 17 to 18. The lower extremities are of equal length with the arms.

The Eighth Month.—Casper considers this the most important period in embryonic life in the forensic point of view, because, according to "statutory declaration," the fœtus is indubitably viable. It measures 16 inches in length, and the centre of the body is nearer the umbilicus than to the sternum, and weighs from

3 to 4 pounds. The skin is firmer, and is covered with short white hair. The testes are often on the point of passing through the abdominal ring. The vulva are separated, so that the clitoris is exposed. The nails now reach the points of the fingers. The humerus is from 23 to 24 lines in length, and the radius is from 18 to 19, and the ulna is from 22 to 23, the femur 24, and the tibia and fibula from 21 to 23 lines. The furrows in the brain are more distinct, and the spinal cord is firmer; the lungs of deeper colour, and the liver is at a greater distance from the navel. The gall bladder is full of yellow bile.

The Ninth Month.—The ossification of the bones is now more perfect, and the fontanelles are much diminished in size. The hair is more profuse, and of a darker colour. The length of the fœtus is from 18 to 20 inches, and its weight averages in this country about 7 pounds, although on the Continent it is considerably less. Baudelocque states that fœtuses of 3 pounds are more common in France than those of 9 pounds. In Paris, the extreme weights were 3 pounds and $10\frac{1}{2}$ pounds. Dr Joseph Clarke states that when the fœtuses exceed 7 pounds they generally are male, while those weighing under this are females. Dr Croft delivered a fœtus 15 pounds; Dr Ramsbotham, senior, one $16\frac{1}{2}$ pounds. Dr Jewel mentions one delivered by midwife 20 pounds. Dr Owen refers to one 17 pounds 12 ounces, and measuring 24 inches in length. Dr Meadows, not to be beat by these marvellous cases, relates a case of a fœtus measuring 32 inches and weighing 18 pounds 2 ounces. It lived only four hours.

At the end of the ninth month and one week, or the tenth lunar month, the fœtus is considered to have attained maturity, as all its organs are then more developed, rendering it fully qualified for extra-uterine life. In studying the appearance of the fœtus at this period of gestation, the attention ought first to be directed to the forms and measurement of the head, for on it being in due proportion to the diameters of the pelvis depends the safety of parturition to both mother and child. In the well-formed fœtus, the long diameter of the head, measuring from the os frontis to the occiput, is from 4 to $4\frac{1}{2}$ inches; the transverse diameter, extending from one parietal bone to the other, is $3\frac{1}{2}$ inches; the oblique, or occipito mental, is 5 inches; the cervico bregmatic, extending from the summit of the head to the mastoid process of the temporal bone, is from 4 to $4\frac{1}{2}$ inches; the trachelo bregmatic is $3\frac{1}{2}$ inches. Of these various measurements, the most important are the longitudinal and the transverse, which ought to bear a due correspondence with the ordinary proportions of a well-formed pelvis.

Next in importance to the measurements of the head are those of the shoulders and nates, although they seldom offer any serious impediment to the birth of the child. When uncompressed, the shoulders usually measure from $4\frac{1}{2}$ to $5\frac{1}{2}$ inches across; while the nates is from 4 to 5 inches in this country. In Germany, however, Casper states that the diameter of the nates is only $3\frac{1}{2}$ inches.

In the fully-developed foetus at birth, the centre of the body is at the navel, which, according to Casper, is midway between the pubis and the ensiform cartilage in the male; but as age advances, it gradually approaches the pubis, where it is generally found at puberty. In the healthy child the skin is of a uniform rosy hue, indicating the activity of circulation near the surface. The redness gradually loses its brightness, and becomes of a yellow colour, which is known to nurses as the yellow gum; although it has been erroneously considered by some authors as a species of jaundice. It is interesting to observe, that when the child is placed on a bed immediately after birth, it shows a great inclination to assume the same position it occupied when in the womb, a circumstance which seems to prove the greater strength and activity of the flexor muscles; in consequence, the head is drawn towards the chest, and the limbs and upper extremities are bent upon themselves. The precise period when the extensor and flexor muscles become equalized so as to enable the child to assume new postures is very variable. Billiard considered that the movements of the child are at first entirely automaton, but that they gradually acquire the power of voluntary motion, when the child is enabled to stretch its hands towards objects which attract its notice; and its head, in place of rolling about like an ill-sewed-on button, becomes fixed at the will of the infant. At the same time, the eyes follow any object which attract its attention with more vivacity. It is important the mother should be fully aware of this fact, in order that she may guard against having the crib placed with its side to the light, by which the child is induced to turn its eyes in one direction too often, and acquire a habit of squinting.

Having briefly referred to the gradual development of the foetus, and to the more striking peculiarities of the well-formed healthy child at birth, we shall now proceed to examine those abnormal conditions which are most frequently met with in the new-born child. That the diseases which occur in the latter period of pregnancy are of serious consequence is fully proved by the number of still-born children, which in England amounts to 1 in 18 or 20 of legitimate children, and 1 in 8 or 10 of the illegitimate. In male children the mortality is much greater than among the female, being in proportion of 140 to 100.

ABSENCE OF THE SKIN.

Deficiency or entire absence of the skin is one of the most remarkable of the congenital diseases, and it has attracted the attention of accoucheurs from the time of Hippocrates, who treated of it with his usual acuteness and observation. When the deficiency is partial, or of limited extent, there is a probability of the child's life being preserved, by the surface becoming cicatrized; but if it is extensive, or if it is accompanied by imperfection of the walls of the abdomen, chest, or cranium, the case is hopeless, and

will prove fatal in a short time. In considering this disease, it is important to distinguish it from the peculiar redness and exfoliation of the skin which occasionally occurs soon after birth, which requires scarcely any treatment beyond cleanliness and the application of violet powder, while the other demands the utmost attention and skill in its treatment. It fortunately happens, however, that it is of rare occurrence.

Treatment.—When the deficiency of skin is of limited extent, and unaccompanied by any of the complications above referred to, it should be treated in the same manner as a scald. Therefore the best applications are the linimentum calcis, collodium flexile, or medicated cotton wool. The child should be well nursed.

CAPUT SUCCEDANEUM OR CEPHALÆTOMA NEONATUM.

This is the most common of all the tumours met with in the new-born child, and although in general it is extremely harmless in its character, from its appearance it is often a source of great anxiety to the mother. It ought not to be treated as of no importance, because it is possible that other bloody tumours of more dangerous nature may be mistaken for it. Therefore the accoucheur ought to be very cautious in forming and expressing his opinion in regard to it. The propriety of this is well illustrated in a case reported by Dr West, which terminated fatally. When the tumour was first seen by Dr West sixteen days after birth of the child, it occupied the whole of the right parietal bone. It was irregular in shape, and measured 12 inches in circumference, and it had not the bony ridge which is so characteristic of caput succedaneum. He ordered it to be bandaged by means of adhesive straps, and cold lotions to be frequently applied. The child seemed to do well for a time, but died eight days after this treatment was adopted. On examination after death, the tumour was found filled with coagulated blood, and there was blood effused between the cranium and the dura matter more than half an inch thick, and occupying the entire fossa of the parietal bone, in which there was a fissure.

There cannot be a doubt that this interesting case was the result of an accident, which had fractured the parietal bone and ruptured a bloodvessel.

Dr Bedford mentions a very similar case, in which the tumour was supposed not to have formed until twenty-four hours after birth. It was only the size of a walnut when first observed; but when Dr Bedford saw it five weeks after, it was as large as half the child's head.

The true caput succedaneum seldom or never attains to so great a size as the tumours just referred to. It is soft, elastic, and slightly fluctulent in the centre, and is surrounded by a ridge of bony hardness, which is liable to be mistaken by the inexperienced for the edge of a fractured bone. It is unquestionably a congenital

tumour, and it always indicates the presenting part of the child. It is found, therefore, almost on every part which is more especially pressed upon by the cervix uteri during labour; but it is found most frequently on the parietal bones, especially the right one. It is invariably the result of pressure, hence it resembles an ecchymosis both in character and colour. Its duration is very variable, as it sometimes remains stationary for some time; but in general absorption commences immediately in the centre, and in consequence the bony ridge is rendered more distinct. The size of the tumour gradually diminishes, so that in the course of a few weeks it entirely disappears. In some instances, however, it remains for a considerable time, and is attended with a sort of crackling sensation when pressed on by the finger, almost as if we were pressing a piece of tinsel. This condition led Chelius¹ to consider it as pathognomonic of ossification of the pericranium.

When the tumour is large it is liable to be mistaken during labour for the bag of waters. I once, when a very young practitioner, committed this error. The labour was tedious, although the patient had had a large family. When I arrived the first stage of labour was well advanced, and on examination I found a large fluctuating tumour, which had quite the feel of the bag of waters. Under the erroneous impression that I should hasten the labour, I scratched what I took for the membranes, but I soon discovered my mistake and desisted. I gave a dose of ergot which soon terminated the labour. On examining the child's head I found a large bluish tumour occupying the upper part of the right parietal bone, and extending a short way on the occiput; and on the most prominent part there was a slight abrasion, the mark made by my nail. The tumour remained of nearly the same size for several days, when absorption commenced, and at the end of five weeks there was no trace of either the tumour or the scratch.

Cause.—This swelling is the obvious result of pressure of the unyielding cervix uteri; hence it is most frequently met with in tedious labour. The resistance of the cervix to the advance of the foetal head ruptures some of the bloodvessels of the scalp. The effused blood soon coagulates round the edge forming the hard ridge, while the blood in the centre remains fluid.

Treatment.—It was the custom at one time to lay open the tumour by an incision, and to empty it of its contents, or to apply caustic for the purpose of inducing suppuration. With such treatment it is not surprising that many cases proved fatal. The treatment in the generality of cases now is to leave them entirely to nature, unless they should prove tedious, or be of unusual size, when an evaporating lotion may be employed, such as the following:—

¹ *Medico-Chirurgical Transactions*, vol. xxviii. p. 410

R Muriat. ammoniæ, ʒj.
 Aceti diluti, ʒi. ss.
 Sp. camphoræ, ʒj.
 M. ft. lotio.

In general, however, such applications are more for the purpose of showing that you are not neglecting the case than from their being absolutely necessary.

ENCEPHALOCELE.

This tumour differs from the caput succedaneum not only in its general appearance and character, but in its locality, being usually situated on one of the fontanelles, or one of the sutures. Foster¹ asserts that it is generally situated in the mesial line at the back of the head, and varies in size from that of an egg to twice that of a child's head. When it attains such dimensions, it must be when it is complicated with hydrocephalus. It may further be distinguished from caput succedaneum by being entirely colourless and free from fluctuation, and by its pulsating synchronously with the heart.

Cause.—It is the result of malformation, or deficiency in the development of the bones of the cranium, in consequence of which the brain is allowed to protrude from the skull under the integuments. In some cases it disappears under pressure; but this is a dangerous practice, as it is liable to produce convulsions. It is not necessarily a fatal malformation, as the bones may extend and enclose the brain; although it is decidedly a congenital imperfection, it is sometimes not observed until some time after birth. It is frequently complicated with other diseases, more especially spina bifida, hare-lip, club-foot, and softening of the spinal cord; all such complication renders the case more hopeless and unmanageable, as they indicate a remarkable degree of imperfection in the child's constitution. In some cases the tumour is entirely denuded of hair, and when complicated with hydrocephalus the pulsation is less apparent. It may prove fatal at an early period in consequence of the integuments being ruptured, an instance of which is reported by Foster,² but it was cured. When the integuments become ruptured the case generally terminates in convulsions.³

Treatment.—A great variety of treatment has been suggested, such as excision, ligature, puncturing, and compression. The results of excision and puncturing are far from being encouraging, and therefore neither ought to be adopted; and although pressure has been successful in two cases, it is attended with great risk of producing fatal convulsions. The use of the ligature has long been laid aside in consequence of the danger attending it.

The mode of applying pressure is by means of a plate of ivory, silver, or lead, which should be retained on the tumour by a band-

¹ *Op. cit.*, p. 307.

² *Op. cit. et loci.*

³ *Coley, op. cit.*, p. 402.

age. Some have suggested, in place of either of the above-named substances, that a piece of leather softened in water should be bound down on the tumour. Underwood recommended that a piece of sheet-lead pierced with holes should be sowed in the inside of the child's cap.¹ This idea is now out of date, as it is not the custom in the present day for children to wear caps.

If pressure is to be had recourse to, it ought to be extremely gentle at first, and increased very gradually; at the same time great attention must be paid to its effects, lest convulsions come on, in which case it must be removed. But if it is not attended by any unfavourable symptoms, it should be continued until the tumour sinks below the level of the bone, when it is possible that ossification may extend and a cure be accomplished.

Meningocele.—This is a tumour which communicates with the brain, and partakes very much of the same nature as encephalocele. It is formed of the membranes of the brain, and is filled with fluid. It may be complicated with encephalocele. According to Mr Holmes, the cause of both these diseases appears to be hydrocephalus "causing a protrusion of the membranes of foetal cranium." "Therefore in all cases of encephalocele or meningocele it is to be apprehended that it is more or less hydrocephalous," and that the tumour "is part of one of the ventricles," or communicates more or less directly with them, and that dropsy of that part of the brain exists.

The anatomy of these tumours embraces—1st, their situation; 2d, their form; 3d, their contents. The ordinary situation is in the occipital region, and it protrudes through the expanded portion of the occipital bone behind the foramen magnum. The bridge which separates the tumour from the foramen magnum is only membranous in general; and in some cases the tumour passes through the foramen itself. Although the occiput is the most common situation of these tumours, they may occur through any of the sutures.

It is of importance to observe the form of these tumours, as on it depends our forming a correct diagnosis as to the chance of effecting a cure. Their contents are also of importance in this respect. If pulsation be felt in them, it is obvious that they contain cerebral matter. They are sometimes almost transparent like hydrocele, in consequence of their containing merely subarachnoidean fluid. But even in such a case there is no certainty that they do not retain a portion of the brain which extends just beyond the cranium, the tumour being a combination of encephalocele and meningocele.

If the tumour is pedunculated and transparent, it is probable it is a simple meningocele; but if it is sessile and pulsating, it is

¹ *Op. cit.*, p. 555.

undoubtedly an encephalocele. This will be rendered more certain by pressure, when cerebral symptoms will be prolonged.

Treatment.—When there is reason to suppose that a portion of the brain forms a portion of the tumour, an operation would be certainly fatal; our only remedies, therefore, are evaporating and cooling lotions.

CYANOSIS, OR BLUE DISEASE.

This disease is discovered very soon after birth, and is indicated by the blue colour and low temperature of the skin; occasional difficulty of breathing, during which the skin becomes of a deeper tint; the pulse is intermittent, and sometimes deep syncope comes on: succession of these paroxysms may recur until death closes the scene. They may be of a milder character, and the child's life may be prolonged. If this is the case, whatever agitates the child, or hurries its circulation, is apt to bring on a paroxysm of more or less severity.

Cause.—It was believed by most authors that this disease was the result of the fœtal condition of the heart and bloodvessels; but many modern authors have opposed this opinion. Corvisart informs us that he has met with this disease when there was no malformation of the heart; or, in other words, when there was no communication between the right and the left sides of the heart by means of the foramen ovale. On the other hand, Dr J. Crampton refers¹ to cases in which “there was no blueness, although the opening between the auricles and ventricles must have been unclosed for many years.” Billiard supports this view of the disease, and he reports many dissections of cases in which children had died at different ages, and in all of them the foramen ovale and the ductus arteriosus were quite patent.² He therefore considers that this disease depends on imperfect oxygenation of the blood, which may arise from causes quite irrespective of any malformation of the heart. This celebrated author has divided his researches on this subject into the following heads, namely, the period at which the fœtal openings are obliterated, their mode of obliteration, and the physiological and pathological consequences resulting from these changes.

1st. *The Obliteration of the Fœtal Openings.*—In nineteen children, he found at the age of one day the foramen ovale completely open in fourteen; in two it had begun to close, and in two it was closed. In the same children the ductus arteriosus was free and filled with blood in thirteen; in four it began to close, and in two it was completely closed.

In twenty-two children of two days old, fifteen had the foramen ovale perfectly open; it was partly closed in three, and entirely closed in four. The ductus arteriosus was open in

¹ Maunsel and Evans, p. 197.

² *Op. cit.*, p. 444.

thirteen; in six it had begun to close, and in three it was entirely closed.

In twenty-two children three days old, the foramen ovale was open in fourteen; in five it was partially open, or rather obliteration had commenced; and it was entirely closed in three. The ductus arteriosus was open in fifteen; obliteration had commenced in five, and it was completed in two, in which the foramen ovale was also closed.

In twenty-seven children of four days old, the foramen ovale was open in thirteen, but not to the same extent in all. The ductus arteriosus was open in fifteen.¹

Casper corroborates these facts by stating that "the foramen ovale is not fully closed before the second month;" and "the ductus arteriosus is perfectly pervious for the first three or four days."²

From these facts it is obvious that cyanosis is not entirely the result of the foetal state of the heart and bloodvessels, and therefore we must look for some other cause; and it is probable that it will be found in some circumstances with the undue oxidation of the blood, and that the seat of the disease is in the lungs, and bears a striking similarity in its nature to atelectasis.

Treatment.—The most satisfactory mode of treating this disease, and the only one which gives the slightest hope of benefit, is to give the advantages of pure air and a good nurse, at the same time the child ought to be warmly clothed, and every means used to keep up its temperature. Although the child's life may be prolonged for a few years, experience gives no hope of a thorough cure, and too often its life is one of great distress to itself and anxiety to others, from the frequent occurrence of the paroxysms already described.

ATELECTASIS PULMONUM.

This disease was first described by Jorg, who gave it its peculiar name. It was at one time considered a rare disease, but Taylor³ states that it is of more frequent occurrence than is generally supposed. It is clearly the result of a congenital imperfection of the lungs, which prevents their becoming fully expanded by respiration. The defect is most frequently met with in the posterior lower edge of the inferior lobes, the middle lobe of the right lung, and the lower edge of the upper lobes. The parts affected have a purple appearance, and are depressed under the sound parts of the lungs. They are solid to the touch, and they convey neither a feeling of friability nor crepitation on being pressed; and when cut into they have a hepatic smoothness. They emit no air-bubbles when put in water, and immediately sink, having in every respect the character of the foetal lungs. As in cyanosis, the foramen ovale and

¹ *Op. cit.*, p. 473.

² *A Handbook of the Practice of Forensic Medicine.* Trans. by Dr Balfour, vol. iii. p. 85.

³ *Op. cit.*, p. 438.

ductus arteriosus are still open. The breathing is feeble and oppressed, and the child is unable to suck, although it swallows when liquid is put into its mouth. If it cries, its voice is weak and has a wailing or whimpering sound. The skin is pale or has a leaden hue. The infant moves its limbs feebly, and in general it lies in a relaxed and drowsy state. In the more favourable cases all these symptoms gradually disappear, the breathing becomes less oppressed, and is slower and fuller, and in time the child acquires the power of sucking, and its strength improves, and it moves more freely, and its voice is more natural. These favourable symptoms are rare, however, and it far more frequently happens that the weakness increases, and the child sinks or dies in convulsions. Meigs states that even in the most favourable cases, in which the alarming symptoms disappear early, they are very apt to return, and the child remains long in a feeble state¹

Cause.—This is most uncertain, and in consequence it has been supposed to arise from a variety of causes, such as natural debility of constitution, multiple pregnancy, excessive labour, and when it comes on long after birth, it may be the consequence of impure air, close atmosphere, or too heavy clothing.²

Treatment.—The great object of our treatment is to produce full expansion of the lungs. For the accomplishment of this some very questionable remedies have been suggested. Maunsel and Evanson have advised that we should endeavour to promote more perfect respiration by means of friction, and stimulating the intestines by castor oil, or if there is much mucus obstructing the bronchi, it may be advisable to excite vomiting by administering a drachm of the vini ipecacuanhæ.³ To give an emetic to a child in such a feeble condition as has been represented, would be a very hazardous proceeding, from the great depression likely to be induced. Therefore, if it is necessary to clear the chest by means of vomiting, it ought to be effected otherwise than by an emetic, and probably irritating the fauces by means of a feather or camel-hair pencil would be better. Meigs⁴ recommends invigorating remedies, such as keeping the nursery at the temperature of 70° or 75°, putting warm clothing on the child, at the same time putting it in an inclined position, the head and shoulders being raised to an angle of 45°. A good nurse should be got for the child, and if it cannot suck, it should be fed with her milk by means of a spoon until it is able to take the breast. Five drops of brandy should be put in the milk and given occasionally. Huxham's tincture of bark, or quarter of a grain of quinine, may be given three times a day. Electricity might be used with advantage, also artificial respiration.

Dr West relates an interesting case of this disease which occurred in a child of three weeks of age, which, however, proved fatal.⁵

¹ *Diseases of Children*, p. 114.

² Meigs, *op. cit.* p. 23.

³ *Op. cit.*, p. 182.

⁴ *Op. cit.*, p. 114–23.

⁵ *Op. cit.*, p. 267.

ASPHYXIA NEONATORUM, OR STILL-BORN.

A child may be still-born from two distinct causes, although the symptoms may be very similar. In the one case, Cruveilhier¹ informs us that the asphyxia arises from engorgement of the brain, the result of tedious labour and long-continued pressure of the fœtal head; in the other case, the respiration is temporarily suspended by debility and want of energy on the part of the child. This powerlessness may continue for some time, and if not properly managed may prove fatal.

Treatment.—It is of importance for the accoucheur to distinguish between the two causes of asphyxia, for the treatment which may be beneficial in the one case would be most injurious in the other. The appearance of the child in general at once indicates the true nature of the case. If the asphyxia is the result of congestion, the child will be strong and robust-looking, and its face will have a swollen and deep-purple hue. If the cord is still pulsating, it ought to be cut, and allowed to bleed to a greater or less extent, according as the respiration improves. It is seldom necessary, however, to allow more than one or two teaspoonfuls of blood to escape. When exhaustion is the cause, the child will be pale and feeble, its mouth open, its limbs flaccid and relaxed, and the cord pulseless. In such a case the child should be separated immediately, its mouth and throat freed from mucus, and artificial respiration induced. This may be done either on Marshall Hall's plan, or the child should be put alternately into hot and cold water, and have stimulants applied to its nose, and the breast rubbed with spirits. The efforts to induce respiration should be continued for some time, as they may ultimately prove successful, a circumstance which was fully verified in a child I recently delivered. It gave scarcely any sign of life for upwards of an hour, but by continuing the treatment here recommended it ultimately revived and became a healthy child. The following case, reported by Maunsel and Evanson, holds out increased encouragement to persevere in the means of resuscitation for at least an hour. The child, having been born by spontaneous evolution along with the placenta, seemed to be still-born, and in consequence "it was placed in a corner of the apartment without being separated from the placenta, and allowed to remain exposed to the cold air for nearly an hour, when, upon an accidental examination, the heart was found to beat feebly, and the proper means being employed, resuscitation was effected, and life prolonged for twenty-four hours."²

¹ *Anat. Pathologique*, liv. 15, p. 1.

² *Diseases of Children*, p. 179.

(To be continued.)

ARTICLE IV.—*Idiopathic or Progressive Pernicious Anæmia, with Cases.* By BYROM BRAMWELL, M.D., Physician and Pathologist to the Newcastle-on-Tyne Infirmary; Joint-Lecturer on Clinical Medicine and Pathology in the University of Durham, College of Medicine, Newcastle-on-Tyne.

(Read before the Northumberland and Durham Medical Society, 8th March 1877.)

MR PRESIDENT AND GENTLEMEN,—Many years ago the famous Dr Addison described “a very remarkable form of general anæmia occurring without any discoverable cause whatever,—cases in which there had been no previous loss of blood, no exhausting diarrhœa, no chlorosis, no purpura, no renal, no miasmatic, glandular, or malignant disease, and termed it *Idiopathic*.”

Dr Wilks subsequently published several cases in the Guy’s Hospital Reports.

The disease was, however, lost sight of until it was rediscovered a few years ago by Dr Biermer of Zürich under the name of *progressive pernicious anæmia*. “In five years this observer met with fifteen cases of the affection in patients varying from 18 to 52 years of age, the majority being women. It frequently followed chronic diarrhœa, and child-bearing seemed especially to predispose to it. Those affected became extremely pale, and the skin of their hands, feet, and face acquired a swollen look. They became weak, had fits of giddiness and palpitation of the heart; the appetite failed, and there was a feeling of pressure in the pit of the epigastrium. Transient diarrhœa often occurred, and there were attacks of feverishness without the fever assuming any particular type. Anæmic murmurs were sometimes present of such intensity that organic disease of the heart was suspected, but none was ever found after death. With all these symptoms of failing health, it is a very remarkable fact that no actual diminution of the fat covering the body could be made out. As the disease progressed, ecchymoses appeared in the retina, even though vision remained intact. Sometimes there were small petechiæ under the skin, and less frequently hæmorrhages took place from the nose and kidneys. Transient paralyses were probably due to small hæmorrhages into the brain substance. Towards the end of life dropsy set in, and delirium also occurred. The course of the disease was always chronic, and the termination always fatal. The necropsy invariably showed a partial fatty degeneration of the papillary muscles of the heart, and fatty degeneration of the smaller bloodvessels of various organs. No treatment was of any avail.”—*Medical Times and Gazette*, 21st November 1874.

Very few cases have hitherto been published in this country. I propose in this paper to place on record the cases I have met with.

CASE I.—*Profound Anæmia following Yellow Fever. Vomiting. Diarrhœa. Irregular Elevations of Temperature. Marked Alterations in the Microscopical Characters of the Blood. Retinal Hæmorrhages. Recovery.*

Alfred Rush, æt. 20, a foreign sailor, was admitted to the Newcastle Infirmary under my care on the 21st March, 1875, suffering from profound anæmia.

Previous History.—He was quite well until four and a half months ago, when he was attacked with yellow fever. He was laid up with the disease for six weeks. After getting better he caught cold, and has been ill since. He came into the Tyne about Christmas, and was at once admitted to the floating hospital under the care of my brother, Dr J. W. Bramwell. His feet and legs have been swollen. He has had a slight cough, has frequently vomited, and has been every now and again confined to bed with irregular attacks of fever. He has had several attacks of epistaxis, and has been frequently severely purged. He has taken large quantities of iron and quinine, together with the mineral acids and a liberal diet. In spite of all treatment he is no better. He has not had syphilis.

Condition on Admission.—He is tall and fair; hair of a light-brown colour. His face looks slightly puffy about the eyelids, and is of a pale lemon hue; the skin is smooth and waxy; the lips and mucous membranes very anæmic. The conjunctivæ are slightly yellow, and there is a small yellow deposit of fat at each inner canthus. The pupils are dilated, but readily contract in the stimulus of light. The feet are not now œdematous.

Alimentary System.—The tongue is clean, smooth, pale, moist, and slightly flabby; the appetite is poor; there is considerable thirst; he frequently vomits. The vomited matters are sometimes green, sometimes yellow. The bowels are regular, the motion light-coloured and semi-solid.

The abdomen is flaccid and tympanitic on percussion. The splenic dulness is sometimes increased. The size of the liver is normal.

Circulating System.—The heart is of normal size. A soft systolic murmur is audible all over the cardiac area, its point of maximum intensity being the apex. The radial pulse numbers 112; it is visible, very weak, easily compressible, and has a slight thrill.

Respiratory System.—He complains of soreness on taking a full breath. A few sibilant and sonorous râles are heard over both lungs. There is no cough nor spit.

Urinary System.—The urine is very pale, sp. g. 1017. It contains no albumen.

Nervous System.—He complains of headache. The nervous system is otherwise normal. On ophthalmoscopic examination the discs are found to be normal.

The temperature is 99° F.

A drop of blood drawn from the finger in the usual way was found to be thin and watery. It speedily separated into two parts, one coloured, the other colourless, looking as if a drop of colourless oil had been added to a red liquid. On microscopical examination it presented the following characters:—The red globules were diminished in numbers, and did not form rouleaux. They were markedly altered in shape, some of them being large, and no longer biconcave; others irregular, and with one or more tailed-like projections; others appeared nucleated; the nucleus was of a pinkish-red colour. There were also numerous small red globules; indeed, they (the red globules) seemed to be of all sizes, from minute masses of protoplasm to the abnormally large oval corpuscles which I have described. (See Plate.) The white corpuscles were not increased. In addition there were many small colourless granules; some of these formed irregular masses, somewhat larger than white blood corpuscles. In one specimen an emerald green rod-shaped body about $\frac{1}{1000}$ th of an inch in length was observed: it seemed to move with a slight vibratile movement. Nothing of the sort was again observed; its occurrence was therefore probably accidental.

Treatment.—He was ordered twenty drops of the tincture of the muriate of iron three times a day.

Subsequent Progress of the Case.—On 22d March he was not so well, having vomited several times through the night.

On 23d March he was still worse. The evening temperature was 105° F. (See Chart, page 414.) The iron was discontinued, and a febrifuge mixture substituted. He complained of pain and tenderness on pressure about the umbilicus.

On 24th March he complained of dimness of vision. On ophthalmoscopic examination several hæmorrhages were seen in both retinæ, most marked in the right.

On 25th March he was better, though still vomiting. Milk diet was ordered, and two drops of liquor arsenicalis thrice daily prescribed.

On 2d April he was decidedly better. The arsenic was increased to four drops. Beef tea and chicken broth were added to the diet.

On 13th April he was still better. An ounce of lime juice was ordered.

On 28th April he was greatly improved. The retinal hæmorrhages were still visible. The improvement gradually continued. He was sent to the Convalescent Home at Whitley on 17th June.

Remarks.—The profound anæmia occurring without any obvious cause, and associated with the characters of the blood and the retinal hæmorrhages which I have described, was a combination of symptoms which had not before come under my notice. I confess I was as completely puzzled as my brother had been.

On 10th June another case similar in all respects was admitted

MICROSCOPICAL CHARACTERS OF BLOOD IN PROGRESSIVE
PERNICIOUS ANÆMIA.



Description of Plate.—1 is supposed to represent a normal white corpuscle.
2, 2¹ Normal red blood corpuscles. The other red globules are abnormal.
The separation of the hæmoglobin from the stroma is seen in some.

under my care, and died on 28th June. The post-mortem revealed nothing of importance. I was still as much in the dark as ever.

Soon after this date my friend Dr Beatson, our then house surgeon, mentioned my difficulties to Professor Grainger Stewart, of Edinburgh, who at once recognised the true nature of the case, and referred me to the authorities I have already quoted.

I thus found that the retinal hæmorrhages which I had observed had been previously described by Dr Biermer and others.

The peculiar condition of the blood has also been independently noted. The observations of Professor Eichhorst of Jena were published in the *Centralblatt Med. Wiss.*, No. 26, 1876, and are thus translated in a note which appeared at the end of a clinical lecture by Professor Quinke of Berne, published in the *Medical Times and Gazette*, 14th October 1876 :—"He asserts that a constant alteration of the red blood globules can always be detected. While a portion retain their normal size, and are only distinguished by their remarkable paleness and slight tendency to form rouleaux, the remainder immediately attract attention by their diminished size. Their diameter may scarcely be a quarter of a healthy corpuscle, while their colour is of a deeper red than normal, and when seen in profile they seem to have more or less completely lost their biconcave outline. Their size may be even so much diminished that many of them resemble small red-tinted fat drops. The alteration here described has not been detected in anæmic and cachectic conditions other than pernicious anæmia. The white corpuscles were present in all the cases observed (seven in number) in remarkably small proportions."

This description tallies remarkably with my own. In many of my cases some of the red globules were apparently nucleated, others were much smaller than a quarter that of a healthy corpuscle. I failed to observe that they, *i.e.* the small red globules, were of a deeper red than normal. Those small red globules which were apparently nucleated certainly had the appearance Professor Eichhorst describes; but only a few of them were nucleated. The small red globules which were not nucleated were of a very pale yellow colour, in fact, of the same colour as the large red globules. In one case which was fatal, numerous small emerald-green molecules were seen; these were probably not of much consequence, for I have noted their presence, though never in the same number, in other diseases.

In the clinical lecture to which this note was appended, Professor Quinke states that in his cases the red globules were diminished in number, and altered in shape and size. Some of them were smaller than normal, and amongst them were a number of tiny yellowish particles. In several cases, he says, "those finely granular masses which are sometimes lustreless and sometimes shining, and which are common in the blood of cachectic individuals, were found in great abundance." In his eighth case they were so abundant that

they rendered the serum of the blood cloudy. This cloudy appearance was not present in any of my cases.

I have detailed the microscopical characters of the blood at length, for they are of great diagnostic value. The nucleated appearance which some of the red globules presented has not, I think, been before observed. Until quite recently, I was inclined to think the nucleation only apparent, and produced by an indentation or curving in of the corpuscle at one point. Most of the nucleated corpuscles were so indented. The appearance may, however, be of more importance than I at first supposed.¹ In the *Edinburgh Medical Journal* for the present month (March 1877) there is an account of the post-mortem appearances found in a case of progressive anæmia by the celebrated German pathologist Colnheim. He found the following alterations in the marrow of the bones:—

“The marrow of all the bones, not only of the skull, sternum, and ribs, but also of the long bones in their diaphyses as well as their epiphyses, was of an intensely red colour, not due to hæmorrhage. When examined with the microscope, this marrow showed a complete absence of the usually abundant fat cells. Instead of these, there were, first, numerous colourless corpuscles—the so-called marrow cells—some like lymph corpuscles, but many of large size, with one or two bladder-like nuclei; and along with these there were a few multinucleated giant-cells; second, there were, in at least equal quantity, coloured elements. Among these latter there were only a small number of biconcave blood corpuscles; there were, in greater proportion, spherical red corpuscles, without nuclei, and varying in size from the diameter of a red to twice that of a colourless corpuscle. The coloured cells, which were most abundant, were red nucleated cells. These also were of different sizes, but, on the average, did not exceed that of the smaller epithelioid marrow cells. Their nuclei, which were of the same yellow tint as the protoplasm, were of different sizes, and were generally single, but in some cases double. Their bodies were possessed of great elasticity, for they could be drawn out to a fine point, and if flattened beneath the cover-glass, they at once regained their spherical shape when the pressure was withdrawn. On the whole, therefore, the marrow was thus reduced to a condition similar to that which is normally present in the marrow of the foetus. A few nucleated red corpuscles were found after death in the spleen, and in the clots taken from the vessels. But although the blood had been repeatedly examined during the life of the patient, none had been found in it.”²

¹ This apparent nucleation has been explained by Messrs Mackeyn and Davy. It is due, they say,—and, I believe, correctly,—to the separation of the hæmoglobin from the stroma.—*Lancet*, 5th May 1877.

² *Edinburgh Medical Journal*, March 1877, page 834.

The following is the history of my second case:—

CASE II.—*Profound Causeless Anæmia. Skin smooth and ivory-like, of a slight yellow tinge. Hair prematurely grey. Red Blood Corpuscles diminished in number, and of all shapes and sizes, many of them apparently nucleated. Numerous retinal Hæmorrhages. Vomiting. Great Restlessness. Delirium. High Temperature. Death. Post-mortem Appearances:—Bloodless Condition of Body. Fatty Degeneration of Heart, Aorta, Liver, Kidneys. Small Calcareous Deposit in Mitral Valve. Enlargement of Spleen and Thyroid. Mammillated Appearance of Stomach.*

John H., æt. 34, grocer's assistant, single, living at Houghton-le-Spring, Durham, was admitted on 10th June 1875, complaining of great general weakness.

Previous History.—Has never been very strong, but was never laid up. His present illness commenced two years ago, with loss of strength. He noticed at the same time that he was getting paler and paler. He has not had syphilis, nor any exhausting discharge. Has had a comfortable dry home. He never had intermittent fever. For the last few months he has been very much worse. His feet and ankles have swelled. He has occasionally vomited. Has drunk beer to excess for fifteen years. He knows no cause for his present illness.

Family History.—Particularly good.

State on Admission.—He is too weak to walk. Whenever he sits up he feels giddy and faint. The face has a pale yellow tinge, and is slightly swollen. He is profoundly anæmic. The skin has a yellowish-white glistening appearance. The hair is gray; it used to be black; the eyebrows are dark and bushy. The pupils are moderately dilated, and very sensitive to light. Ophthalmoscopic examination is difficult owing to the fact that whenever the light is thrown into the eye, the patient moves his head to one side, or shuts his eyes. After dilatation with atropia, a good view was obtained, and the retinae were seen to be spotted with numerous extravasations. Sight, he said, was good, and always had been so. The vessels of the disc were so bloodless as to be almost invisible. Some of the veins of the retina were congested in the form of streaks. The hæmorrhages were chiefly in the course of the vessels.

The feet are slightly œdematous. The patient is thin, the muscles being soft and wasted; muscular irritability is very marked.

Alimentary System.—The lips and gums are highly anæmic. The tongue is very pale, clean and moist; the appetite poor. He occasionally vomits, but not at any particular time. The vomited matters are green or yellow, and very bitter. The bowels are costive. For the last four months he has been troubled with internal piles, but has only once passed a little blood. The liver dulness measures 5 inches; the splenic dulness is somewhat increased.

The blood presents the same characters, but even more marked than in the previous case, the red globules being greatly diminished in number, and of all shapes and sizes. Many of them are apparently nucleated. The white corpuscles are few; some of them small, others large and oval.

Circulatory System.—The cardiac dulness is somewhat increased; transversely it extends from the left border of the sternum to the nipple. The heart's action is uncertain, and somewhat tumultuous. There is a well-marked apex systolic murmur. The pulmonary sounds are louder than the aortic; a loud venous hum is heard on both sides of the neck. The external jugular veins are distended and knotted, but not pulsating. The radial pulse is very weak: irregular, with a slight thrill. It numbers 100 in the minute.

The Respiratory Organs are natural.

The Urine is natural.

He is very restless, tossing about in bed. Sleep is disturbed and fitful.

Treatment.—A grain of quinine three times daily, with milk and beef-tea *ad libitum*, were prescribed.

Subsequent Progress of the Case.—In the first few days after admission, he remained *in statu quo*.

On 17th June he was ordered twenty drops of the tincture of the muriate of iron.

On 18th June he was much worse, constantly tossing about in bed, and complaining of thirst; the tongue was moist. The temperature was 102°·6° F.

On 19th June he was still worse. Had passed a very bad night. He complained of aching pains in the legs, and of a choking feeling in the throat. The thyroid was found to be considerably enlarged. This had not been previously observed. The iron was discontinued; half an ounce of lemon juice was ordered, and the dose of quinine increased to two grains.

On 21st June he was rather better; the temperature and pulse had fallen; he had twice vomited. Two ounces of brandy were added to the diet.

On 23d June he was very much worse; the face had a sunken expression.

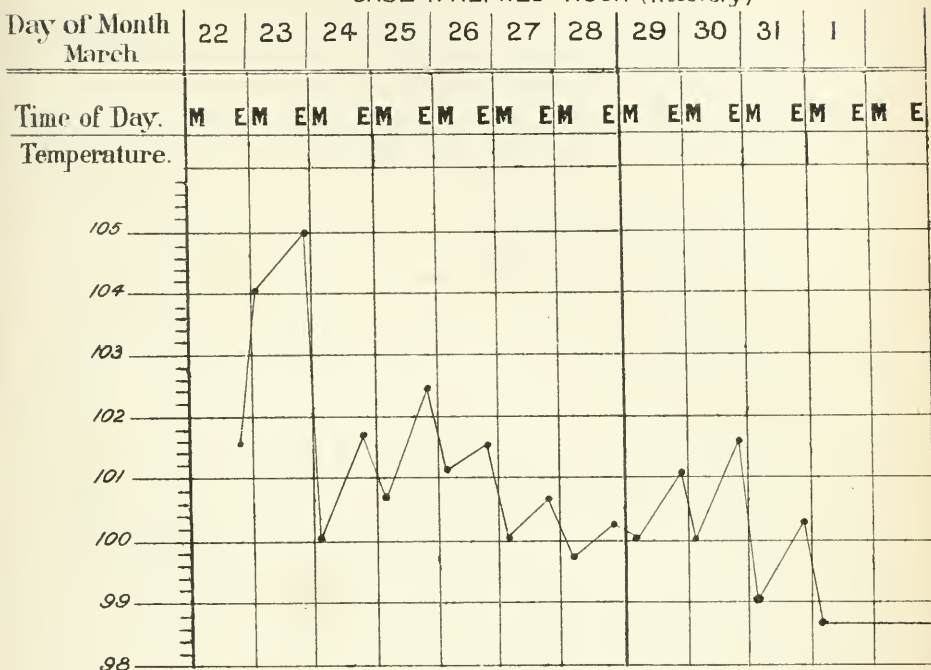
On 24th June he was very restless and delirious; he had tossed about all night, and "worked with his fingers about his neck," saying there was something there which was choking him.

On 25th June he died at 10·40 A.M. The temperature rose rapidly before death. The highest point observed was 105° F. (see Chart). I took the temperature at 12 A.M. (an hour and twenty minutes after death); it was then 102°·8 F.

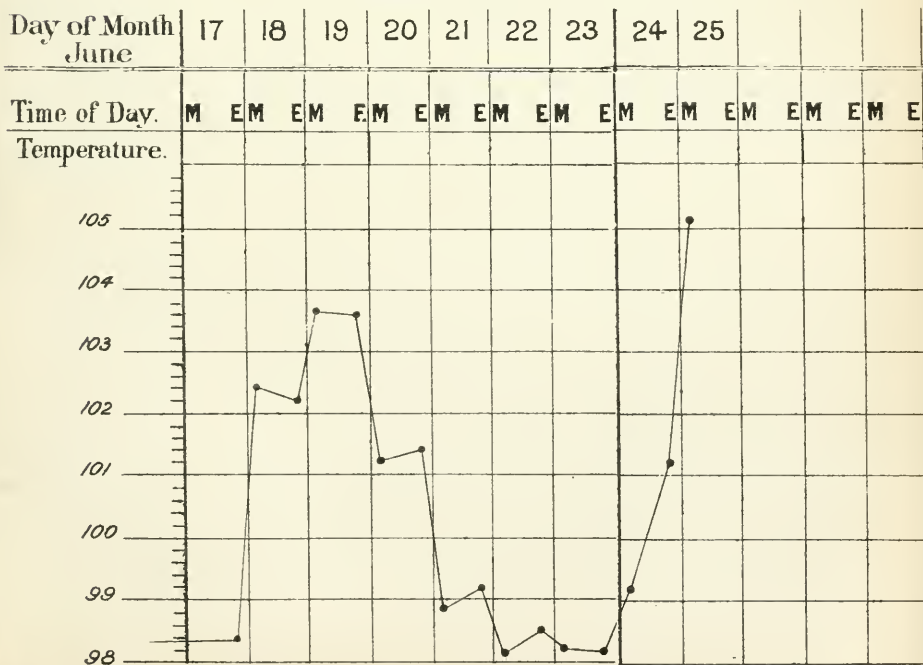
Autopsy (four hours after death).—*External Appearances.*—The body was warm; skin of a pale yellow hue; feet and legs œdematous. The abdominal parietes contained a fair amount of fat.

TEMPERATURE CHARTS OF CASES OF PROGRESSIVE PERNICIOUS ANÆMIA
SHOWING IRREGULAR ATTACKS OF FEVER.

CASE I. ALFRED RUSH (Recovery)



CASE II. JOHN H ____ (Fatal)



Thorax.—The *Pericardium* contained a few ounces of yellow serum. The *Heart* weighed $13\frac{1}{2}$ ounces, and was covered with fat. On the interior wall of the right ventricle, just over the position of the tricuspid valve, there was a large milk spot; another smaller one was situated on the anterior aspect of the apex. On the anterior surface of the left ventricle, half an inch above the apex, there was an extravasation of blood as big as a threepenny piece. The cavities of the organ were almost empty, the only contents being about three teaspoonfuls of thin fluid blood. The posterior segment of the mitral valve contained a small calcareous deposit, and was somewhat shrunken. The cavities were dilated; the muscular substance very soft and friable. The interior of the left ventricle, especially the papillary muscles, was dotted with little spots of fatty degeneration. The interior of the aorta was spotted here and there in a similar manner. Under the microscope the cardiac muscle was seen to be decidedly fatty.

Lungs.—The left was pale and completely bloodless; its weight $9\frac{1}{4}$ ounces. The right was slightly adherent at the apex; it weighed 1 lb. $4\frac{1}{4}$ ounces. There was a commencing consolidation at the posterior part of the upper lobe. On section of this part, a considerable quantity of red serum escaped.

The *Bronchial Glands* were not enlarged.

The *Thyroid* was the size of a hen's egg; it weighed $2\frac{1}{2}$ ounces. Both lobes were enlarged. On section, it was seen to be in places yellow and gelatinous, in others of a purple colour; at the lower part of the left lobe there was a calcareous mass. On microscopical examination the gland was found to be in a state of colloid degeneration. In parts there was calcareous infiltration.

The *Liver* weighed 4 lbs. $\frac{1}{2}$ oz., and was fatty.

The *Spleen* weighed $9\frac{1}{2}$ ounces, was of a uniform dark purple colour, and firm. On microscopical examination it seemed normal.

Kidneys.—The left weighed 7, the right $5\frac{1}{2}$ ounces. Both were embedded in fat. The cortical substance was pale. On microscopical examination the renal epithelium was found to be in places fatty.

The *Stomach* in the neighbourhood of the pylorus was studded with small round projections. These projections were arranged in rows, and were found on microscopical examination to consist of round lymphoid cells. The mucous membrane of the *small intestine* seemed softened and atrophied. The various coats of the gut were more loosely connected than in health.

The *Supra-renal Capsules* and other organs were healthy.

The *post-mortem Appearances* may be summed up as a bloodless condition of the body; fatty degeneration of the heart, aorta, liver, and kidneys; enlargement of the thyroid gland and spleen; a mammillated appearance of the stomach, and an atrophied condition of the intestine.¹ The small calcareous deposit in the mitral valve was not

¹ Dr Samuel Fenwick thinks the essential pathology of the disease is an atrophy of the stomach. See Lecture on Atrophy of Stomach, *Lancet*, 7th and 21st July 1877.

of great moment. The condition of the right lung was quite recent, and had nothing to do with the essential pathology of the disease.

The bloodless condition of the body and the fatty degeneration have been observed in all cases. The enlargement of the spleen has also been previously noted. The enlargement of the thyroid has not, I think, been before seen; it was probably, therefore, an accidental complication. The mammillated appearance of the stomach is interesting. This condition sometimes occurs in Addison's disease, and is described by Dr Greenhow (*Croonian Lectures*, 1875, p. 28).

I regret that the medulla of the bones was not examined. Professor Pepper of the University of Pennsylvania, who has written a very able paper on the subject,¹ was the first to describe an abnormal appearance of the marrow, and founded on it a theory as to the nature of the affection. He thinks progressive pernicious anæmia is simply the medullary form of pseudo-leukæmia. Since the appearance of Professor Pepper's paper the marrow has been examined by other observers. Some, as Dr Bradbury of Cambridge, have failed to find anything abnormal; others, as Professor Cohnheim, have found marked changes. The constant occurrence, therefore, of the marrow lesion is still *sub judice*.

The next case was also fatal.

CASE III.—*Profound Anæmia following an Attack of Yellow Fever. Marked Alterations in the Red Blood Corpuseles. Retinal Hæmorrhages. Obstinate Diarrhœa. Anæmic Murmurs at Base of Heart and in Vessels of Neck. Giddiness and Faintness on Exertion. Death. Autopsy:—Bloodless Condition of Body. Fatty Degeneration of Heart and Liver. Œdema of left Leg. Slight Ulceration of Small Intestine at Ileo-Cæcal Valve.*

F. N., æt. 28, a foreign sailor, was admitted on 16th August 1875, complaining of diarrhœa and great debility.

Previous History.—He had yellow fever seven months ago, and has been out of health since. The diarrhœa commenced a fortnight ago. Before the attack of yellow fever he was a healthy man. He has not had syphilis.

Present Condition.—He is thin, emaciated, and markedly anæmic. The skin has a slight yellow tinge. The conjunctivæ are perfectly pearly. There is slight œdema about the eyelids, but nowhere else. He is very weak—hardly able to walk across the room. Whenever he gets up he feels a "swimming" in the head, and has on more than one occasion tumbled down. The blood presents the same appearances as in the two previous cases. On ophthalmoscopic examination, a few retinal hæmorrhages, of small size, are seen in both eyes. The discs and surrounding retinæ are markedly pale, the arteries being hardly distinguishable from the veins.

¹ *American Journal of Medical Sciences* for October 1875.

A soft, blowing, systolic murmur is audible at the base of the heart, and there is a loud venous hum in the veins of the neck. The pulse numbers 84, and is small and weak. The tongue was smooth, pale, and moist; the appetite good. He complains of constant thirst.

The abdomen is distended with flatus, and, in consequence, the exact limit of the hepatic and splenic dulness cannot be defined.

The Urine amounts to 59 ounces in the 24 hours. It is pale, slightly acid, sp. gr. 1008, and contains a trace of albumen. On microscopical examination of the deposit, which is scanty, a few squamous epithelial and pus cells are seen.

The Temperature is normal.

The other Systems and organs are normal.

Treatment.—He was ordered milk diet and an astringent mixture.

Subsequent Progress of the Case.—He was purged several times during the first twenty-four hours after admission. The motions were watery, light-coloured, very offensive, liquid, and frothy.

On 20th August the diarrhœa had ceased. The urine was free from albumen. Eight grains of quinine, thrice daily, were prescribed.

On 28th August he was again severely purged. The chalk mixture was again administered.

On 30th August he was very much worse. Eight ounces of brandy were prescribed.

On 31st August the diarrhœa had stopped; but he was still very sunk and prostrate.

On 1st September he died.

The Post-mortem was made ten hours after death. The body was considerably emaciated. Rigor mortis was strongly marked.

Heart.—The pericardium contained two ounces of clear yellow serum. There was a small milk spot on the anterior surface of the left ventricle. The cavities of the heart contained a small quantity of thin liquid blood. The segments of the aortic valve were slightly thickened. The valve was competent. The muscular substance was mottled with spots of fatty degeneration, and was very friable. The heart weighed 10 ounces.

Lungs.—Both were adherent throughout, the adhesions being very firm and dense. The left lung weighed 1 lb. 11 oz. On section, it was œdematous—especially the lower lobe posteriorly. The right lung weighed 1 lb. 8 oz.; a small quantity of frothy serum escaped from its lower lobe.

The Liver weighed 3 lb. 12 oz., and was fatty.

The Spleen weighed 3½ ounces, and was normal.

The Stomach contained about a pint of yellow-ochre-coloured fluid, and was normal.

The Intestines contained a large quantity of yellow-ochre fluid,

similar to that found in the stomach. The mucous coat was very easily stripped off, and seemed softened. At the ileo-cæcal valve there was a small superficial ulceration the size of a sixpence.

The Appendix Vermiformis contained a small concretion.

The Mesenteric Glands were somewhat enlarged.

The Kidneys.—Both weighed $6\frac{1}{2}$ ounces. They were smooth, fatty, pale, and bloodless.

The Supra-renal Capsules were normal.

The Thyroid Gland was normal.

The Brain weighed $51\frac{1}{2}$ ounces, and was normal.

The body throughout was almost bloodless. The *Blood*, where present, was thin and watery.

The *Marrow* of the bones was not examined.

Remarks.—It is etiologically important to note that this patient had had an attack of yellow fever, and that his illness dated therefrom. The same history was present in Case I., already related.

CASE IV.—*Profound Anæmia, with Emaciation. Changes in Size and Form of Red Blood Globules. Numbness and Loss of Power in Hands and Feet. Intense Reflex Action in Lower Extremities. Great Improvement under Quinine and Arsenic.*

Thomas R., æt. 43, single, a cabman, was admitted on 18th March 1875, complaining of weakness and inability to walk.

Previous History.—He enjoyed excellent health until three years ago, when he was laid up for some weeks with swelled feet and “yellowness of the face.” The doctor who attended him said he had a liver complaint. After recovering from this illness he continued well until Christmas, when he caught cold while working in a wet drain. He felt weak and ill, but managed to walk until five weeks ago. He then felt a numbness and loss of power in both hands. This was followed by weakness in the legs and great difficulty in walking.

He has been a hard drinker of spirits. Twenty years ago he had a chancre, but no secondary symptoms.

Present Condition.—Patient, who is a big-made man, is sallow, thin, and emaciated. The skin is dry and wrinkled, the mucous membranes are markedly anæmic.

He has great difficulty in walking, and his gait is very peculiar. He takes very long strides, and throws out his legs in an uncertain manner. The back is kept slightly arched, the head thrown back, the arms extended, one on either side of him, the palms being directed backwards, the forefinger and thumb of each hand approximated. When in bed he can move the legs in any direction. The reflex movements, on tickling the soles of the feet, are intense. The contractility of the muscles to the electric current is diminished. There is marked loss of grasping power in both hands. He is unable to approximate perfectly the forefinger and thumb, hence he cannot pick up a pencil from the table nor button his clothes.

Sensibility to heat and cold is natural. He can imperfectly localise impressions. He complains of pins and needles, and of numbness in both hands. The same sensations are felt in the legs, behind the knees. He complains of pain and tenderness on pressure over the lumbar region. On the application of the hot-sponge test nothing unusual is elicited. There are no ataxic symptoms.

Sight is dim, and has been failing for the past two years. The pupils are contracted. The fundus cannot be distinctly seen, owing to opacity of the vitreous.

The other special senses are normal.

The reflex functions (defecation, urination, swallowing, etc.) are normal.

Circulatory System.—The heart-sounds are very weak. There is a soft systolic apex murmur. The area of cardiac dulness is small. The radial pulse numbers 56, and is very soft and weak, slightly visible and jerking.

The *Respiratory* and *Urinary* systems are normal.

The appetite is good, tongue clean, bowels regular. The liver and spleen seem of normal size.

On Microscopical Examination of the Blood, it was found that the red corpuscles went into clusters, but did not form rouleaux. Many of them were tailed. Many of them were smaller than natural. The appearance of apparent nucleation was not seen. The white corpuscles were slightly in excess.

The *Treatment* consisted in the administration of iron, quinine, cod-liver oil, lime-juice, and arsenic, in the order named, together with a liberal diet.

The patient improved slowly at first, but after commencing the arsenic the improvement was marked and rapid. During his stay in hospital the urine once or twice contained a trace of albumen, but no casts.

He was discharged on 22d July, saying he was fit for work. The duration of his stay in hospital was 126 days.

Remarks.—The diagnosis in this case was not so certain as in those previously related. The condition was one of profound and apparently causeless anæmia, with marked changes in the microscopical characters of the red blood globules. So far it resembled progressive pernicious anæmia. The increase in the white corpuscles, and the emaciation, and the dry wrinkled condition of the skin, were opposed, however, to this view of the case.¹ The intensity of the reflex movements was remarkable; indeed, so great was it, that a condition of incomplete pseudo-paraplegia was produced, the debilitated condition of the patient partially contributing thereto. The intensity of reflex movement and the diminution of sensibility were no doubt due to the malnutrition of the nerve-centres.

¹ For further remarks on the diagnosis of Progressive Pernicious Anæmia, see my Clinical Lecture in the *Medical Times and Gazette* of 20th October 1877.

CASE V.—*Profound Anæmia following Pregnancy. Vomiting. Diarrhœa. Retinal Hæmorrhages. Death. No Autopsy.*

Mary B., æt. 29, a married woman, living at North Shields, was seen by me in consultation with my brother, Dr J. W. Bramwell, on 14th September 1875.

Previous History.—She was quite well until after her last confinement, which took place eight months ago. Since that date she has been gradually getting paler and weaker. She knows no cause for her illness. The labour was easy, and not followed by any excessive discharge. Of late she has suffered from vomiting and diarrhœa. She has not menstruated since her confinement. She weaned her child some months ago.

Present Condition.—She was profoundly anæmic, but remarkably well nourished. The face was slightly swollen, and of a greenish-yellow hue. The skin was very smooth and ivory-like. The pupils were equal, and moderately dilated. The sight had been dim for three months. There were well-marked hæmorrhages in both retinæ; the discs were very pale, the vessels almost empty. She complained of pains and giddiness in the head. She was unable to sit up; when she attempted to do so, she felt giddy and faint. Loud blowing murmurs were heard at the base of the heart and in the vessels of the neck. The heart seemed slightly increased in size. Before she took to bed she frequently suffered from palpitation. The urine was copious in amount, very pale, sp. g. 1010. It was free from any deposit, and contained no albumen. A drop of blood was placed on a slide, and was examined half an hour afterwards. Unfortunately, owing to the delay and the changes which had taken place during the transit, the examination could not be relied upon.

The abdomen was natural; the liver and spleen were both slightly increased in size.

Subsequent Progress of the Case.—There were two or three attacks of diarrhœa after my visit, and the patient gradually sank. She died towards the end of September.

Notwithstanding every effort, a post-mortem could not be obtained.

CASE VI.—*Profound Anæmia. Retinal Hæmorrhages. Marked Alterations in the Red Blood Corpuseles. Palpitation. Dyspnœa. Hæmic Murmurs. Vomiting. Diarrhœa. Œdema of face, feet, and Hands. No Emaciation. Recovery under Arsenic.*

John D., æt. 38, married, a chemical worker, was admitted on 26th November 1875, complaining of shortness of breath and palpitation on the least exertion, swelling of the face, hands, and feet, and general debility.

Previous History.—He was a healthy man until seven months ago, when his present illness commenced. It was brought on, he thinks, by exposure to cold and wet. He took a shivering. This was followed by general weakness. His colour has undergone a marked change, and his hair has become grayer than it used to be. He has several times vomited, and has had frequent attacks of diarrhœa. Three months ago he was jaundiced; two months ago his face swelled; two weeks ago his feet became œdematous. He lives in a fairly healthy house, and has had abundance of good and varied food. He thinks “the gas” was partly the cause of his complaint. Has been a fairly steady man. Has not had syphilis.

Family History.—Good.

Present Condition.—He looks sixty years of age. The feet, face, and hands are slightly swollen. He is extremely anæmic. The skin has a yellow tinge. The hair is gray. The conjunctivæ are pale. There is a small deposit of fat at each internal canthus. There is no emaciation, but the muscles are soft and flabby. Muscular irritability is marked. His weight is 11 st. 11 lbs.

The *Temperature* is normal.

He is short of breath, and suffers from violent palpitation on the least exertion. He often, too, feels giddy and faint. Loud blowing murmurs are heard at all the cardiac orifices. A mitral murmur, systolic in time and propagated upwards towards the left axilla, being specially noticeable. Indeed, so marked was it, that Dr Mickle, the junior house-surgeon, diagnosed the case as one of cardiac dropsy from mitral insufficiency. The size of the heart is natural. The pulmonary second sound is not accentuated. The radial pulse is 76, regular, and of fair strength.

There is a loud venous hum in both sides of the neck. The left external jugular vein is distended and prominent.

On *microscopical examination*, the *Blood* was found to present exactly the same character as in the case already described.

The tongue is clean and moist, but pale; the appetite good; there is no thirst. He vomits occasionally, and is subject to frequent attacks of diarrhœa.

The *Liver* dulness measures $4\frac{1}{2}$ inches. The splenic dulness seems slightly increased.

The *Thyroid* gland is not enlarged.

The *Respiratory System* is normal.

The *Urine* is very pale, neutral, sp. g. 1020. It is slightly darkened by heat and nitric acid, but contains no albumen.

He sleeps fairly well; occasionally suffers from headache. He complains of numbness in the hands and feet, especially after exposure to cold. Violent reflex movements are produced on tickling the soles of the feet. He feels unsteady when he walks. His gait is natural, and he stands steadily with his eyes shut. He complains of pain in the back, and of slight tenderness on pressure

over the lumbar region. The application of the hot-sponge test shows nothing abnormal.

Sight is dim in both eyes. The pupils are dilated, but very sensible to light. The fundus is very bloodless, the disc somewhat ill-defined. There are no retinal hæmorrhages.

He complains of a singing noise in the left ear. The other special senses are normal.

Treatment.—He was ordered five grains of sulphate of quinine, and fifteen drops of the tincture of the muriate of iron three times daily.

Subsequent Progress of the Case.—On 3d December he was ordered a teaspoonful of phosphorized cod-liver oil three times daily ($\frac{1}{16}$ gr. of phosphorus).

On 6th December the eyes were again examined with the ophthalmoscope, and several large retinal hæmorrhages were seen. The hæmorrhages were evidently recent; the stratum of blood seemed very thin. (It is interesting to note the fact that a few drops of atropia had been placed in each eye, and that extreme dilatation had resulted therefrom. It was only after this dilatation had continued for some days that the retinal hæmorrhages were observed.)

15th December.—He was much worse. The temperature yesterday was 100·2° F., the pulse 120. The iron was discontinued, and liq. arsenicalis substituted, two drops thrice daily.

18th December.—Dose of liq. arsenicalis increased to iv. minims.

28th December.—Dose increased to vi. minims.

31st December.—Feels better. The numbness is less. There is more œdema than on admission. The liver dulness measures 6 inches. The splenic dulness is also increased.

11th January.—Very much better. Shortness of breath less. Colour more natural. The dose of liq. arsenicalis increased to viii. minims.

20th January.—So much better that he asked to be made an out-patient. The dose of liq. arsenicalis increased to xii. minims.

6th March.—Still improving. Dose of liq. arsenicalis increased to xvi. minims.

24th April.—Says he never felt better in his life. His colour is now quite natural. His hair is in places growing darker. He is not in the least short of breath. All cardiac murmurs have disappeared. He looks fifteen years younger than he did when admitted to hospital. The blood is now normal. Sight is still a little dim.

Remarks.—This case is of great interest, from the fact that recovery took place, and was clearly due to the administration of arsenic. The same good effects also followed the use of the drug in Cases I. and IV., already related.

In Cases I. and IV. the drug was used empirically, for I was not then acquainted with the post-mortem appearances, one of the most important of which is fatty degeneration of the heart. Now it is well known that arsenic is a most valuable cardiac tonic, and that it is especially useful in cases of fatty degeneration. Remembering this, and also the fact insisted upon by the late Dr Anstie, that arsenic is a most valuable blood tonic, I gave it, and pushed it in Dunn's case.

Although the result was all that could be wished for, I would not for a moment have it supposed that arsenic will be found a specific for the disease. It is impossible to reason on a single case, however successful. This remedy has been tried without any good result by Dr Samuel Fenwick¹ and others.

The explanation of his failure probably is that we have not to deal with a single diseased condition, but that idiopathic anæmia, just like anæmia in general, is the product of various morbid processes, and represents the very last stage of the anæmic process (*Professor Quincke's Clinical Lecture, Medical Times and Gazette, 14th October 1876*).

It is, however, highly satisfactory to be able to point to a single case in which recovery so obviously followed treatment, and that in a disease which in the experience of many is uniformly fatal.

Since the above paper was written, I have met with two other cases of the disease, the notes of which are as follows:—

CASE VII.—*Profound Anæmia following Pregnancy. Dropsy of Face and Feet. Dyspnœa. Palpitation. No Emaciation. Retinal Hæmorrhages. Changes in Red Blood Globules. Diarrhœa. Recovery.*

Mrs A., æt. 31, living near Bishop-Auckland, enjoyed good health until the latter part of her last pregnancy, when she became weak and anæmic; her feet swelled (there was no albumen in the urine), and she was very short of breath.

She was confined on 16th November 1876. The labour was easy, and was not followed by any great discharge. Her recovery, so far as the local condition was concerned, was satisfactory; but her general health did not improve; she became weaker and weaker, shorter and shorter of breath. Her colour changed, the complexion becoming a pale yellow. She occasionally vomited, and had frequent attacks of diarrhœa.

She was seen by me in consultation with my friend Mr Fielden, to whose kindness I am indebted for seeing the case on 27th March 1877. She was then profoundly anæmic; the feet were considerably swollen, the face slightly cedematous about the eye-

¹ *Lancet*, 21st July 1877, page 78.

lids, and of the pale yellow hue which is always seen in the disease. The blood presented the characters described in previous cases. The retinae were covered with numerous hæmorrhages. The extravasations were chiefly in streaks parallel to the vessels; the discs were very pale, the vessels hardly distinguishable. The urine was natural. The other organs were healthy, with the exception of the lungs. Two days before my visit the patient had got cold, and commenced to cough. Sibilant and sonorous râles were heard over both lungs; over the left apex posteriorly there was evidence of some consolidation.

The lung affection disappeared in a few days, and the patient ultimately made a good recovery.

The treatment adopted was the administration of carbonate of iron. Arsenic was tried, but had to be discontinued, as it caused sickness.

CASE VIII.—*Profound and apparently causeless Anæmia. Retinal Hæmorrhages. Characteristic Appearances of Blood.*

W. J., æt. 47, a pitman, was admitted to the Newcastle Infirmary under my care on 6th September 1877, complaining of great weakness, shortness of breath, and palpitation.

Previous History.—His illness commenced a year ago without any obvious cause. He gradually lost strength, and his colour changed. He has had repeated attacks of diarrhœa, dysenteric in character. For two years, at least, his eyesight has been failing. He has never lost any blood. He lives in a healthy house, and has been a steady man.

Condition on Admission.—He is profoundly anæmic, very short of breath on exertion; there is a loud venous hum at both sides of the neck; the conjunctivæ are slightly yellow; there are several retinal hæmorrhages in the right eye; the fundi are otherwise normal. The microscopical characters of the blood are very typical, the separation of the hæmoglobin from the stroma being very marked. The feet are slightly œdematous. The heart is feeble; the pulse, too, very weak. The liver and spleen seem normal. The urine is normal. The tongue is clean, but somewhat dry. The appetite is good. He complains of great thirst.

The other organs and systems are normal.

He only remained in hospital a few days, and then insisted upon going home. I am, therefore, unable to give any further particulars of the case.

TABULAR STATEMENT OF DR BRAMWELL'S CASES OF PROGRESSIVE PERNICIOUS ANÆMIA.

No. Initials.	Age.	Sex.	Occupation.	How long ill.	Supposed Cause.	General Appearance.	Retinal Hemorrhages.	Condition of Blood.	Diarrhoea.	Vomiting.	Irregular Attacks of Fever.	Complications.	Treatment.	Result.	Days in Hospital.	Remarks, Post-mortem, etc.
1	A. R.	20	M.	Sailor.	4½ months.	Yellow Fever.	Profound anaemia. Face purplish and of a pale yellow hue. No emaciation.	Yes.	Red globules fewer in No. of all sizes and shapes. Some apparently nucleated.	Yes.	Yes.	None.	Iron, quinine, lime-juice, arsenic.	C.	88	
2	J. H.	34	M.	Grocer.	2 years.	Unknown.	As in Case 1. Some emaciation.	Yes.	As in Case 1.	Yes.	Yes.	Pneumonia before death.	Iron, quinine, brandy.	D.	15	Bloodless condition of body. Fatty heart, aorta, liver, kidneys. Enlargement of thyroid and spleen. Mammillated stomach.
3	F. H.	28	M.	Sailor.	7 months.	Yellow Fever.	As in Case 1. Some emaciation.	Yes.	As in Case 1.	No.	No.	Slight ulceration of intestine.	Astringents, quinine, brandy.	D.	16	Bloodless condition of body. Fatty heart, liver, and kidneys. Atrophy of intestines. Slight ulceration of ileo-cæcal valve.
4	T. R.	43	M.	Cartman.	2½ months.	Cold?	Profound anaemia. Yellow hue of skin. Emaciation. Skin dry and wrinkled.	None seen. Opacity of vitreous.	As in Case 1, but no apparent nucleation.	No.	No.	None.	Iron, quinine, lime-juice, arsenic.	C.	126	Intense reflex movement in lower extremities. Loss of power and numbness in hands.
5	M. B.	29	F.	Married Woman.	8 months.	Pregnancy.	Profound anaemia. Yellow hue of skin. (Edema of feet. No emaciation.	Yes.	?	Yes.	?	None.	Iron, quinine, astringent.	D.	*	No post-mortem.
6	J. D.	38	M.	Chemical Worker.	7 months.	Cold.	Profound anaemia. Yellow hue of skin. Dropsy. No emaciation.	Yes.	As in Case 1.	Yes.	Yes.	None.	Iron, quinine, cod-liver oil, arsenic.	C.	55	Rectal hæmorrhage developed after admission.
7	M. S.	31	F.	Married Woman.	4 months.	Pregnancy.	Profound anaemia. Yellow hue of skin. Face and feet swollen. No emaciation.	Yes.	As in Case 1.	Yes.	?	Bronchitis and pneumonia.	Iron.	C.	*	
8	W. J.	47	M.	Titman.	1 year.	Unknown.	Profound anaemia. Yellowish hue of skin. Dropsy of feet. No emaciation.	Yes.	As in Case 1.	No.	No.	None.	Iron, arsenic.	In statu quo.	4	Did not like hospital, and discharged himself.

* Private patients.

ARTICLE V.—*On the Management of Natural Labour.*

By ALEX. BAIRD, M.B., Perth.

VERY frequently, even in primiparæ, we find that labour has been begun and finished in such a short time, that the patient herself feels agreeably surprised that foundation for her dread has been but slight. She recovers without any bad symptoms consequent on the rapid dilatation and contraction of the uterus. This is the condition of affairs which pleases alike patient and attendant; and hence it behoves us to consider how in most cases it can be brought about, so rendering unnecessary long hours of suffering to the patient and of waiting to the busy practitioner.

In most, if not all, of our text-books we are told that in ordinary cases of midwifery the less done by the medical attendant the better for the patient, and that our duty as a rule is quietly to wait until the membranes are ruptured, then perhaps to give a little support to the perineum and receive the child. Generally, when called to a case we find the os uteri of a size at least equal to that of a florin, and oftener larger; so that we may, leaving nature to effect delivery, wait for a few hours before being permitted to tie the cord.

It is in these cases, and when the os is somewhat dilatable, that I fancy much can be done by a gradual but continuous dilatation of the os by means of the examining finger and *between* the pains. The patient complains but little of such treatment, and it will be found that, the process being continued, more especially towards the pubic half of the circle, the occiput has more room to descend and the pains become more regular and efficacious, so that labour is assisted materially, much time being saved.

Dilatation of the os, and that part of the cervix which can be reached by the examining finger, is a practice which has been objected to by some eminent writers; but in most text-books no reference is made to the procedure. I have found it useful in saving time, and, further, it seems to me to be a distinct assistance in the natural process of parturition.

Women often will make some objections to the slightest movement of an examining finger, except during a pain, and this seems to show that it is during the continuance of the pain that our interference is expected. It can scarcely be expected, however, that much good can be effected by attempts to dilate the rigid and contracted circle.

During a pain, the uterus, as it were, attempts to draw itself up over the head of the child, and possibly this may be assisted by gently pushing the cervix in the required direction; but during the interval not only can this be effected, but the relaxed circle can be made so much larger as to give both the longitudinal and circular fibres a much better chance when they are again brought into

action. Another decided advantage resulting from the more rapid dilatation of the os is, that pressure of the cervix between the descending head and the brim is much less likely to occur. This is of great consequence during protracted labours, and especially after premature rupture of the membranes, as, no doubt, continued pressure will tend to cause a pulpy and degenerated condition of the parts, liable to end in rupture, or at least apt to set up sloughing and consequent septic mischief.

At present, too, when we so often get inert preparations of ergot placed in our hands, we anxiously look for some means whereby ergot will be more seldom required. In several cases I have patiently waited the effect of two good doses of the liquid extract of ergot given at an interval of twenty minutes, and carefully noted the frequency of the pains, which are often not at all accelerated. In similar cases I have found that by gradual manual dilatation, the pains have regularly increased in frequency and in effect, so that labour has been finished in a much shorter time than in the cases left to nature, even when assisted by ergot.

When the head has reached the perineum, we frequently find that expulsion is so much delayed that the short forceps are brought into use. This I find can be often obviated by a very simple expedient, not referred to in text-books. When the occiput is fixed against the pubes and the face is known to be in the hollow of the sacrum, we can give nature much assistance by introducing the index finger per rectum, and, as if with a hook, catching the chin or mouth, we easily bring about the final turn which the head requires to complete its delivery. In resorting to the above expedients in practice I have had nothing but the best results.

ARTICLE VI.—*On the Human Voice.* By C. RUMNEY ILLINGWORTH, late Assistant-Demonstrator of Anatomy, University of Edinburgh.
(Continued from vol. xxii., page 541.)

The action of the crico-thyroid muscles.—The view generally accepted is that these muscles take their fixed point at the cricoid, and draw downwards and forwards the anterior part of the thyroid cartilage by rotating it about an axis passing transversely through the inferior pair of crico-thyroid joints, thus stretching the vocal cords by increasing the distance between their anterior and posterior attachments. But, as Schech has demonstrated, this cannot be their action, for the cricoid cartilage is not fixed; and even if it were, the crico-thyroid muscles are not strong enough to oppose, much less overcome, the thyro-hyoid muscles, which are put in action at the same time, as is proved by the simultaneous narrowing of the thyro-hyoid and crico-thyroid intervals, as the voice rises in the scale.

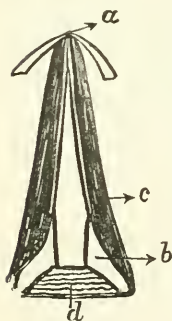
The thyro-hyoid muscles, taking as their fixed point the hyoid

bone, draw up and fix the thyroid cartilage, and thus enable the crico-thyroids to take their fixed points at the inferior cornua and lower border of that cartilage, and to draw up the anterior part of the cricoid cartilage.

Schech's view is the following:—"When the thyroid cartilage is fixed by the thyro-hyoids, the crico-thyroid muscles draw the anterior part of the cricoid cartilage upwards towards the thyroid, and thus effect a rotation backwards and downwards of the posterior part of the cricoid. Now, since the thyroid cartilage is fixed anteriorly by the thyro-hyoid muscles, whilst the arytenoid cartilages are fixed posteriorly to the cricoid cartilage during vocalization by the arytenoid and lateral crico-arytenoid muscles, the backward inclination of the body of the cricoid, caused by the contraction of the crico-thyroids, affects also the arytenoid cartilages resting upon it; the distance between the anterior and posterior attachments of the vocal cords is thereby increased, and thus the longitudinal tension of these bands is brought about."—*Zeitschrift für Biologie*, Band ix. p. 258, 1873.

Before criticising this view, the action of the sphincter glottidis should be considered. By the sphincter glottidis I mean the mass of muscle which extends from the margin of the aryteno-epiglottidean fold to the upper border of the cricoid cartilage, and embraces the arytenoid cartilages posteriorly, including thus the aryteno-epiglottidean, thyro-arytenoid, lateral crico-arytenoid, and arytenoid muscles, between all of which there exists a distinct continuity of muscular fibre. Fig. 1 represents a transverse section of the glottis and surrounding parts. The sphincter is seen passing from the angle of the thyroid cartilage backwards and outwards parallel to the vocal cords, forming here the thyro-arytenoid portion, and becoming continuous with the arytenoid portion, by distinct bands of muscular fibre, round the posterior borders

FIG. 1.



TRANSVERSE SECTION OF THE GLOTTIS AND SURROUNDING PARTS.

- a. Angle of the thyroid.
- b. Arytenoid cartilage with the true vocal cord attached to it.
- c. Thyro - arytenoid portion of the sphincter.
- d. Arytenoid portion of the same.

of the arytenoid cartilages. Regarding the *laryngeal cavity* as the means whereby all the variations in pitch, both of the true and falsetto voice, are produced, and the vocal cords as accessory structures merely, I look upon the regulator of the size of this cavity,—viz., sphincter glottidis—as a muscle which acts in its entirety in every attempt at phonation. According to this view, its action upon the arytenoid cartilages would tend not only to approximate those structures, and hence, also, the vocal cords attached to them, but also to draw them bodily forwards towards its anterior attachment. It is here, I think, the crico-thyroid muscles come into play: acting at the same time as the sphincter, they will hold back the posterior part of the cricoid cartilage, thus acting upon the arytenoid cartilages (which are

tethered to the back of the cricoid by the crico-arytenoid ligaments) to prevent their being drawn forwards by the antero-posterior traction of the sphincter.

If the sphincter acts in its entirety at every attempt at phonation, there cannot be any longitudinal tension of the vocal cords by the crico-thyroid muscles, for the thyro-arytenoid portion of the sphincter would also be stretched at the same time, and that, moreover, during its contraction, for both muscle and vocal cord are attached to the arytenoid cartilage. This, of course, it is almost needless for me to state, would be an anomaly in the phenomena of muscular action too strange to admit of belief.

But it may be said that if this view be the correct one, there is direct antagonism in the actions of the sphincter and crico-thyroid muscles. This, however, will be seen not to be the case when it is remembered—*firstly*, that the arytenoid cartilages are fixed only at their bases by the crico-arytenoid ligaments above that point and up to their apices being pliable and elastic; and, *secondly*, that these important structures are moved in the arcs of circles, of which the crico-arytenoid ligaments are the radii, by the respective actions of the sphincter glottidis and posterior crico-arytenoid muscles (the former being a muscle of phonation and the latter muscles of respiration), whilst the crico-thyroid muscles act as the *centre-pin-fixers* by firmly holding the cricoid attachments of the crico-arytenoid ligaments.

(To be continued.)

ARTICLE VII.—*On Puerperal Fever.* By GEORGE WESTON WOOD, M.D., Faribault, Minnesota.

FOR upwards of two years I have used the medicine, or combination of medicinal plants, introduced to the notice of the profession by Dr Kerr of Galt, Canada, in this Journal, 1865, 1867, and 1870; and afterwards by himself and others in numerous papers in the *Canada Lancet*, 1873, 1874, 1875, and 1876.¹ Adhering to the principle laid down by Dr Kerr, that the medicine has a curative power over tenderness or ulceration of the mucous membrane, I have employed it in dysentery, diarrhœa, scarlatina, and measles. My experience has been chiefly in dysentery; from this disease every patient has recovered; and in many severe illnesses it has helped me to save life, so that I have great cause to be satisfied. More recently, in consequence of a request from Dr Kerr, who

¹ The components are dulcamara, stramonium, siuna lineare, cicuta maculata, conico-solinum Canadense, and either digitalis or squills; the former being styled the Digitalis, the latter the Squill Combination. Experience having shown that these are not suited to some exceptional cases, Dr Kerr has introduced a third combination (*Canada Lancet*, July 1874), styled the Strychnine.

called my attention to a case in the *Canada Lancet*, by Dr M'Donald, Wingham, Ontario, I have given it in well-marked puerperal fever with the most gratifying results.

CASE I.—Mrs A., aged 28, mother of several children, delivered, after an easy and quick labour, by my partner, Dr Rose, on the night of the 26th of May 1876. For several months previously she had been threatened with miscarriage. Dr R. left her comfortable at 2 A.M., but, on calling during the day, found rigors frequent, small pulse, tympanitis, and all the symptoms of a severe attack of puerperal fever.

I visited in consultation near midnight of the 28th. She was lying on her back, knees drawn up, abdomen very tympanitic, and exquisitely painful to the touch; slight delirium, peculiar anxious expression of the countenance; pulse small, thready, and very rapid; skin hot and dry; urine scanty and high coloured; lochia had not entirely stopped; no diarrhœa. She had taken opium freely by the mouth and also hypodermically; but notwithstanding, the disease had rapidly increased in severity. We were both of opinion that, unless a favourable change occurred very soon, the patient had not long to live. We resolved to give six and a half grains of the digitalis combination, without opium, every four hours, with an occasional hypodermic injection of morphia as the case might require. In twelve hours the symptoms were considerably improved, recovery dating from the first dose; indeed, the benefit resulting from each could be plainly seen. The recovery was so rapid that by the 31st May she was entirely out of danger, and on the 5th June we ceased to attend. After the digitalis combination was commenced, only two hypodermic injections were given.

CASE II.—Mrs J., delivered in the country of her first child on August 5th. On the 12th was doing well, and moved into this city, a distance of twenty-three miles. On the 14th was seized with a severe chill, great pain, tympanitis, &c. Dr R. was sent for, who gave opium and quinine very freely, but she continued to get worse. I was called at 4 A.M., August 17th, and found all the symptoms of a severe attack of puerperal fever. She had intense pain in the abdomen; tympanitis was not so excessive as in the last case, but she had profuse diarrhœa unchecked by the doses of opium and quinine. We gave her six and a half grains of the digitalis combination without opium every four hours. In twelve hours pain had nearly ceased, and in twelve more, diarrhœa having terminated, she was out of danger. By the 21st she was greatly better. The recovery was so rapid that seven visits comprised my attendance. From the hour I first saw her no opium was given, but the digitalis combination was continued for some time in the same doses as at first.

CASE III.—Mrs R., aged 30, had early in pregnancy such severe and persistent vomiting that it induced uterine contractions and a tendency to miscarriage, with occasional floodings, which occurred

throughout her entire pregnancy. She was so reduced in strength as to be obliged to keep her bed more than three-fourths of the time. These unpleasant symptoms were only controlled by morphia given hypodermically. She was delivered at 6 A.M. on 5th December, after an extremely severe labour lasting twelve hours; during six of these she was under chloroform. The child (her first), which weighed nine and a half pounds, had a large and unusually firmly-united head. Thirty-six hours after delivery a very severe chill ushered in puerperal fever. She had intense pain, increased by the slightest pressure, tympanitis, bad facial expression, cold sweat, slight delirium, and all the symptoms mentioned in Case I., diarrhœa being likewise absent. We decided to give six and a half grains of the digitalis combination without opium every four hours. In twelve hours she began to improve; in four days was thoroughly convalescent, and made a good and rapid recovery. Prior to the administration of the digitalis combination, morphia was freely given hypodermically, the unfavourable symptoms, apparently unretarded, all the while developing rapidly, and leaving no room to doubt that a fatal termination was fast approaching. After thirty-six hours' use of the powders she was so much better that the nurse omitted to give them—an error which in twelve hours brought on an aggravation of the symptoms, but recurrence to the medicine soon checked this, and recovery again went on.

CASE IV.—Mrs D., mother of several children, residing in the country, about ten miles from where the other cases occurred, was delivered by a midwife on the 15th November, and on the 18th was seized with a chill, followed by well-marked symptoms of puerperal fever, accompanied by colligeretive diarrhœa. My first visit was at 10 P.M. of the 23d. By this time, however, there was no pulse at the wrist, collapse having occurred. She was given the digitalis combination, with opium and brandy, freely, but died in eight hours. I learned that the symptoms were very similar to those of the preceding patients. As will be perceived from the dates, all the cases were sporadic. The three who recovered began to sleep within twelve hours from the commencement of the use of the digitalis combination,¹ and sleep became natural and sound in twelve to twenty-four hours more.

I have noted the hypnotic effects of the medicine in children, especially in dysentery and scarlatina, and also in sleepless crying babies. I may add that after-pains are far more speedily relieved and cured by the digitalis combination with opium than by opium alone. Might not this medicine be tried in hydrophobia with a reasonable prospect of success, at least if this disease has its chief seat in an inflamed or ulcerated mucous membrane?

¹ [We understand that this and the other combinations may be obtained from Messrs Murdoch Brothers, chemists, Glasgow; and Messrs Duncan, Flockhart, & Co., Edinburgh.—ED.]

ARTICLE VIII.—*On the Etiology and History of Leprosy.* By
W. MUNRO, M.D., London, late of Cupar-Fife.

(Continued from page 153.)

THE only account we have of the leprosy (?) of New Zealand, called by the natives "ngerengere," or "Tuwhenna," is that given by Dr Thomson.¹ His description resembles closely that of West Indian joint evil, the so-called anæsthetic leprosy, except that, in the six cases he saw, there was no anæsthesia. From my experience, however, of that kind of leprosy, I cannot but coincide with the opinion emitted by the Royal College of Physicians, to the effect that the term "anæsthetic" is a misnomer, as anæsthesia, or rather as I prefer to call it "analgesia" (for it is the sense of *pain* that is lost, not that of feeling entirely²), is much more readily distinguished in tuberculated than in non-tuberculated leprosy or joint evil, in fact—in many cases of the latter I could not discover it at all, while in advanced cases of the tuberculated kind it was always present, and I have even discovered it in a case of only about seven months' standing. In some advanced cases, not only the tubercles but the whole body is analgesic. Thus, as Dr Thomson's description of the blisters on the fingers, followed by dry ulceration, but preceded by an eruption which appears and disappears exactly as described by Carter,³ while the face becomes swollen and shining, and the eyeballs exposed—as his description tallies in a great measure with what I have seen in the West Indies, although in cases of joint evil there, there is *no* swelling of the face or nose, and there *is* paralysis of the orbicularis, and consequent falling of the lower eyelid, and exposure of the conjunctiva (symptoms not shown in Thomson's plate of one case, which has rather the appearance to me of the portrait of a sufferer from mixed leprosy), and as I do not attach very great importance to the mere absence of anæsthesia, or rather, as I should prefer to call it, analgesia, analgesia being, although *when it is present in conjunction with other symptoms*, undoubtedly pathognomonic of leprosy, yet much more easily discovered in the tuberculated than the non-tuberculated form⁴—I am inclined to admit that "ngerengere" *may* be a peculiar variety of leprosy, but, like Virchow,⁵ do not consider that it is decidedly proved to be the actual specific disease,⁶ to

¹ "Diseases of New Zealanders," *Med. Chir. Review*, April 1854, p. 496, *et. seq.*

² This remark only applies to the *cutaneous* nerves; pain may still be felt during destruction of deep-seated structures.

³ "Trans. of Med. Soc. of Bombay, 1862," "Report on Leprosy and Elephantiasis, 1874."

⁴ Brassac mentions that anæsthesia is not always present, and Carter (Mem. on Leprous Nerve Disease, in Path. Soc. Trans., 1877) speaks of individuals in whom the nerve affection is very limited as to the hand below the wrist.

⁵ Granulations geschwulste, p. 528, footnote.

⁶ It would be of great interest, if the disease is not yet extinct, for some

which, however, it is the nearest approach of any yet seen, and between which and ergotism it may be a connecting link. It is worthy of note that, as stated by Thomson himself, Dr Shortland looked on it as a variety of such a disease as ergotism,¹ and other medical men thought it was a kind of scrofula; so that, as even observers on the spot have not agreed as to its nature, I am inclined to look on positive opinions, such as have been expressed by Liveing,² who says that "no one can possibly doubt its identity with elephantiasis Græcorum," after reading Thomson's description, as being much too hastily arrived at, especially as while calling it "*lepra gangrenosa*," Thomson himself distinctly states that all the patients he saw were highly scrofulous—showing possibly some doubt even in his mind as to the real nature of the disease. In conclusion, as to this point, I may remark that the duration of the disease is much shorter than that of anæsthetic leprosy, which it most closely resembles, being one to eight years, while in St Kitts I found the average duration of such cases to be seventeen and a half years, some living to periods far beyond that average—thus showing a difference from ngerengere too great to be accounted for simply by difference in the conditions of life in the two countries.

As to the history of ngerengere but little seems to be known. Thomson seems to have ascertained to his own satisfaction that it was much more common twenty years previously, and that it existed before Cook's discovery of the country. It is found chiefly in the *interior* of the North Island, but also on the coast, and in the Middle Island, and probably, as formerly, only known in the interior, as Cook himself is most emphatic as to the good health of the natives. After several weeks' visit to the coast, he says, "In all our visits to their towns, we never saw a single person who had any bodily complaint."³ Savage, whose account, as he was a surgeon, is of special value, says also, "Neither the accounts nor the appearance of the natives indicate the prevalence of disease."⁴ Thus, it does not, a century, and half a century ago appear to have been known on the coast, and Thomson himself mentions as a proof that it is not a *syphilitic* disease, that he had heard of fewer cases at the Bay of Islands than anywhere else, whereas, had it been so, there ought to have been more, as Cook landed there. In New Zealand practitioner to try to settle this point. Perhaps the presence or absence of the temporarily so called leprous elements, described by Carter (in the Path. Soc. Transactions, 1876 and 1877), might assist in clearing up the diagnosis—that is to say, if any cases still exist in the North Island. The disease was dying out when Thomson saw it. Of course, the simple presence of these brown leprous elements would not of itself be sufficient, as Carter has seen them in other skin diseases, but, taken in conjunction with the other symptoms, their presence would go a great way in deciding the matter.

¹ The absence of intoxication, and of the anæsthesia which generally precedes gangrene, is against this. (See Lasègue, Arch. Gen. de Med., May 1857; and Hirsch, p. 456, on Ergotism.)

² *Lib. cit.*, p. 63.

³ Vol. ii. p. 46.

⁴ "Account of New Zealand, particularly the Bay of Islands," by John Savage, Surgeon, 1807, p. 88.

the present settled state of the country, the few cases on the coast might have migrated from or become infected with the disease in the interior.

As to whether the Maories brought the disease with them when they reached New Zealand about four and a half centuries back,¹ or if it has been developed among them since, we have no positive knowledge, but I am inclined to the latter opinion, as, had it always existed among them, it would not have been *entirely* confined, as it evidently was last century and the beginning of this (if, as Thomson's researches would seem to show, it then existed), to the interior; had it not been so confined, either Cook or Savage must have seen something of it.

I will consider hereafter the etiology of the disease in New Zealand.

Turning to Australia, we find that the disease is known in Victoria, but *only* among the Chinese.² Up to last year this was still the case, as I am informed by a letter from the Central Board of Health (for which I have much pleasure in thanking the officials), with which I may say was also enclosed some conclusions come to, I think rather hastily, by the medical officers of that body, to the effect that its not having spread among other races proves its non-contagious nature. I think this can be much more reasonably explained by the fact that, in Australia, mutton has of necessity to be used three times a day by the great mass of the population—in fact, no population in the world, taken *en masse*, is so thoroughly flesh-fed as the Australians. Besides, there is no predisposition through bad health to take the disease, Australian immigrants being necessarily as a mass healthy individuals; so that, as bad general health predisposes to leprosy, they are not exposed to it. I may here observe, that there were only 15 lepers among 10,385 Chinese in Ballarat, Castlemaine, and Beechworth, or 1 in 692, probably, from the accounts given of its enormous spread in China already referred to, much less than the relative number which obtains in that country,—a result probably brought about by the fact, that it is only people who are at the time in good health who can emigrate.

Leprosy is found in Japan,³ but nothing is known at present of its history in that country.

It is also seen among the natives of Java and Sumatra both in the interior and on the coast,⁴ also in the Malay Islands, and in Singapore, Penang, and Malacca, where the Chinese are chiefly

¹ Trollope, "Australia and New Zealand," 1873, vol. i. p. 302.

² Coll. Phys. Rep., 1867, pp. 14 and 80. Living says (p. 92), writing in 1873, "Lately it has been reported that the disease has spread beyond the Chinese population." It is evident, therefore, from what I have stated, that this report is an error, and may have arisen from the disease having been seen by Hutchison in one European, who, however, contracted it in India.

³ Ashmead in *Doctor*, May 1875 (quoted from *Phil. Med. Times* of 14th January.

⁴ Hirsch, p. 314.

affected, though it is common among the Malays and Dyaks.¹ It is not seen among the Arab races *there, they having no communication with other races.*² In British Burmah it is chiefly seen among the immigrants from Bengal.³ On the west of the Indian Ocean it is common in Madagascar, the Mauritius, where it was imported in the middle of last century,⁴ and Mozambique.⁵

We have thus historically completed the circuit of the earth, but as I formerly had occasion chiefly to speak in reference to its ancient history only, in Asia, to be more complete, I must speak of it as it exists there at present, so completing the geographical history of the disease.

I have already spoken of it in China, Thibet, and Yarkand, but as to India, where, though so little attention has been paid to it (it never having, as among the Jews, had any great notice given to it among the religious codes or laws, possibly because the relative numbers affected are small, though the aggregate is hideously large), it is known from Ceylon to the Himalayas, I would wish to say a little more.⁶ I find from the censuses of the following provinces of 1871 and 1872, comprising nearly the whole of India, viz., Bengal, Madras, Bombay, the Central Provinces, the Punjab, the North-West Provinces, Oudh, Coorg, and Mysore, that the total number of lepers then enumerated was 99,639, or 1 in 1864 of the population; ⁷ but as I have already stated, about 1 in 1500, or 120,000, would be I believe nearer the truth. My grounds for this belief are that the proportion of females to males, as enumerated, is so small, being only 1 in 5 in the whole of India, a proportion which obtains nowhere else in the world, while it varies

¹ Macnamara, p. 13, and Coll. Phys. Rep. p. 31. Ida Pfeiffer ("A Lady's Voyage Round the World") states that there are in the island of Singapore 40,000 Chinese and only 10,000 Malays in 55,000 of a population, and that the Chinese and Bengalese are *almost exclusively males*—a fact of some importance.

² Landré, p. 40. This is a strong negative proof of its communicability, the Arabs being by no means exempt, *as a race*, from the disease when *exposed to communication with an infected race*, as with the negroes in Cairo and Eastern Arabia, or the Moors and Kabyles in Algeria.

³ Coll. Phys. Rep., p. 194, and Macnamara, p. 9. It is probable that the facts that at Akyab, where the above remarks chiefly refer to, the Burmese population is omnivorous, unlike the vegetarian Hindoos, and that the Burmese laws treat lepers as outcasts and malefactors, have much to do with its rarity among the natives. I may say that I have not been able to find mention of it in two or three books of travel on the "Land of the White Elephant," as Siam is called, that I have consulted.

⁴ Coll. Phys. Rep., p. 219.

⁵ Hirsch, p. 311; Cazenave and Schedel, p. 355; and Coll. Phys. Rep., p. 83 and Appendix.

⁶ It being impossible in a work of this kind to do full justice to the subject of leprosy in India, those desiring fuller information must refer to the references I quote.

⁷ In my first papers the number was given as 1 in 1755, which the above must be taken as a correction of.

from 10 to 67 in Bengal, 10 to 66 in the North-West Provinces, 10 to 26 in Bombay, 10 to 20 in Madras, to 10 to 18 in the Central Provinces.¹ Now, in the census of the North-West Provinces,² the difficulty of obtaining true census returns in regard to the *number* even of the females is mentioned, and it is stated that there "seems to be uniform concealment of females between 10 and 13." So much the greater difficulty would there be in discovering what the relatives would be anxious to conceal—the existence of leprous females. This is borne out by the statement (p. 63) that the numbers given are not "a correct representation of the extent to which persons afflicted with these infirmities (insanity, leprosy, etc.) are to be found in the various localities in the province." Thus, such returns are only useful as showing a certain number who *are* affected, but must not be taken as showing the *whole* number. It is highly probable that such returns as those of Bombay and the Central Provinces are nearer the truth, while I think we must accept it as proved from the agreement of the censuses of all the provinces on the matter, that male lepers *are* more numerous than females—a fact speaking strongly in favour of the communicability of the disease, when the seclusion in which the greater number of the females of India live, *so that they are less exposed to contact with the sick than the males*, is taken into consideration.³ Some allowance, however, must be made for female infanticide, especially of diseased children.⁴

Passing from India, we find leprosy in Persia,⁵ Bokhara,⁶ Eastern Arabia,⁷ and Syria,⁸ in the latter chiefly in the south and the mountains of Lebanon. It also exists among the eastern islands of the Mediterranean,⁹ the Ionian Isles, Crete, Rhodes, etc.

I may also add that Sonnini mentions its existence in Turkey early in this century; but Thomas,¹⁰ who quotes from him, does not decidedly say whether he meant European or Asiatic Turkey; he appears to mean European. We have no information in regard to it

¹ Census of Madras for 1872, Part II. p. 215.

² Pp. 36 and 54.

³ In connexion with the great number of lepers in India (which, however, it must be remembered, is *relatively* in its 190 millions, a smaller proportion than obtains elsewhere), I must here emphatically protest against the manner in which the disease is ignored by modern text-books and many teachers of medicine. The latest text-book in which I find it described is Good's "Study of Medicine"—a masterpiece of its kind, published in 1840. As a consequence, students who are to be spread over the whole world may go into practice *in total ignorance that leprosy even exists in modern times*; and the study of the disease is even neglected by medical men living in the tropics.

⁴ See Macnamara in Coll. Phys. Rep., p. 45; and Census of North-West Provinces, p. 3.

⁵ Coll. Phys. Rep., p. 71, and Hirsch, p. 313.

⁶ *Ibid.*, p. 313.

⁷ Niebuhr, *lib. cit.*

⁸ Wortabet, "Memoir on Leprosy in Syria," in *Brit. and Foreign Med. Chir. Rev.*, July 1873, and Coll. Phys. Rep., p. 54 *et seq.*

⁹ *Ibid.*, p. 58, *et seq.*, and *Once a Week*, 1863, p. 143.

¹⁰ "Modern Practice of Physic" (1813), p. 548.

of a later date in the interior of the country, though it does exist among Turks, Greeks, and Jews at Constantinople to a limited extent.¹ Virchow² mentions its existence in Moldavia; in Greece, where it began in Europe, it is still known in some parts.³ It is worthy of notice that the diet of the people where it has lingered so long is a vegetable one, with salt fish—poor food, when compared with that of the English, among whom it has so long ago disappeared.

As a kind of appendix to the history, I must notice cases of so-called leprosy arising among natives of Europe who have never been abroad.

Hebra mentions⁴ cases of "pigment lepra" or morphœa in Europe, and confuses it with macular leprosy; and Erasmus Wilson⁵ looks on morphœa "as a faint trace still existing among us of leprosy;" but with all due respect to such high authorities, sufficient grounds for such an opinion seem to be wanting. In the first place, as Dr Hilton Fagge points out,⁶ nearly all the cases of morphœa are in females (20 out of 25 reported by E. Wilson), while in leprosy as many males are affected as females. Secondly, the anæsthesia is only secondary to the destruction of the skin and contained tissues, in morphœa; while the skin is intact there is hyperæsthesia, as I have myself observed; on the other hand, there may be, and generally is, complete analgesia in cases of leprosy, while the skin, with the exception of some scurfiness, is perfectly intact. I have bored pins and thorns into such skins, while the patient was looking straight and unconcernedly into my face. Thirdly, the patches of morphœa are rarely symmetrical, leprosy is almost always so. Besides, morphœa is unilateral, leprosy symmetrical; morphœa is a purely local disease, leprosy, as Wilson says, is a blood disease. Again, Wilson states (Lecture 8, May 1856), that mercurials do good in some cases "where a syphilitic affection had to be controlled," while all authors from Schillingus agree that mercurials are hurtful in leprosy. The character of the deposit also differs in the two diseases, being gelatinous in leprosy, lardaceous in morphœa; and, lastly, the eruptive form of leprosy appears and disappears; morphœa progresses continually from its first appearance.

Wilson's opinion, therefore, "that the pathognomonic characters of the disease (*i.e.* morphœa) are such as to point directly to elephantiasis as their source," appears to me to be without any foundation, and his admission quoted already as to the syphilitic affection of some of the cases, points out a much more likely general cause in this country. At the same time, I can under-

¹ Coll. Phys. Rep., p. 70.

² *Lib. cit.*, p. 529.

³ Coll. Phys. Rep., p. 68.

⁴ *Lib. cit.*, p. 156 of vol. iv.

⁵ *Lancet*, 26th Ap. 1856.

⁶ Guy's Hosp. Catalogue, p. 203. All the facsimiles are of females. A woman was shown at the Path. Soc. this year. (See Transactions, 1877.) Wilson himself notices this fact.

stand that in countries where leprosy is endemic, its poison there, as that of syphilis in England, *may* act as an exciting cause of morphœa in some cases, and thus morphœa may come to be looked on as a first stage of leprosy.

Besides these cases of morphœa, however, a number of cases have from time to time been reported in the journals of so-called leprosy. Having carefully examined into all of these to which I could possibly obtain a reference, I can only say that, with the exception of one, Dr Rees' case, none of them can with the least confidence be pronounced cases of leprosy,¹ although some of them may come under the head of leproïd, as described by Virchow,² having, as he says, analogies with leprosy, but differing from it in the absence of anæsthesia and of diseases of the mucous membranes. Some of these cases are really cases, however, of syphilis. I will try shortly to review all the cases I have referred to, noting as shortly as possible their points of difference from true leprosy. In Nourse's case,³ not only was there no anæsthesia after *nine* years' illness, a period long after it is a distinctly marked symptom in leprosy, but there was actual tenderness of the *reddish* (not dusky) tubercles, which besides, even up to that period, came out in crops, instead of being permanent. I have seen just such a case in Scotland, in which, from some vaso-motor disturbance, large temporary tubercles formed on the eyebrows and cheeks, the patient being subject to severe pain in the stomach, but I never looked on it as a leprous case. In Erasmus Wilson's case,⁴ the sudden invasion, emaciation, and contraction of the skin are all unlike leprosy, while the contraction of the fingers was only caused by the skin disease; there is no mention of real anæsthesia, only that the sensibility was somewhat deadened, as it must have been with the skin in the diseased state described, nor are any of the characteristic bullæ of leprosy, which appear on the fingers, mentioned. From the description, the case does not appear to me to be one of *bona fide* anæsthetic leprosy. I have now under treatment a case of pemphigus of the fingers of one hand, in which, while the pemphigus lasts, there is contraction, but that disappears whenever the bullæ have burst and healed up,—there is a deadened feeling in the finger now affected, but not analgesia. Such a case, while it resembles anæsthetic leprosy in some of its symptoms, and might be *supposed* to be caused by the poison of leprosy still remaining in this country, is to my mind simply a case of local disease, or at most a local manifestation of some slight temporary derangement of the system.

Broadbent's case,⁵ in a young man from Stornoway, was unlike leprosy in so far as there was no anæsthesia or nodules on the *ears* after nine years' illness, and there *was* profuse sweating and emaci-

¹ Landré (p. 71) and Kaposi say the same of three such cases reported by Steudener.

² *Lib. cit.*, p. 540.

³ *Med. Times and Gazette*, 2d Sept. 1865.

⁴ *Lancet*, 19th Jan. 1856.

⁵ *Ed. Med. Jour.*, 1855, p. 434.

ation—very uncommon symptoms, to say the least of it, in the tubercular disease. The ulceration of the palate would point to syphilis. Had this been proved to be a true case, it might have been looked on as the last case in a remote district where it had not quite died out. Priestley¹ quotes two cases, but the first is evidently Dr Broadbent's case, although slightly erroneously quoted; the second is really a case of dry gangrene of one finger, which is mentioned elsewhere by Sir James Simpson² as a "curious amputation, which is sometimes a mark of elephantiasis."

Dr Gull's case³ is so clearly from the history, symptoms, and post-mortem appearances, a case of syphilis, only resembling leprosy in the presence of tubercles, that I am astonished to find the facsimile of it in the museum of Guy's Hospital still marked as a case of leprosy. There was no anæsthesia, and the face is of a coppery colour, not the *dusky* colour shown in model 423, a typical case. A similar case is reported in the *British Medical Journal* of 24th January 1874 by Victor de Meric as a case of syphilis; and I have myself seen a man in St Kitts whose face was covered with tubercles, but in whom there was no anæsthesia, and whose illness was looked on by Dr Boon of that island, who had known him for many years, as undoubtedly the effects of syphilis. Mr Gaskoin's case,⁴ headed "tubercular leprosy," has not a symptom indicating the presence of that disease, unless to one holding to the old confusion between it and elephantiasis Arabum, or Barbadoes leg.

Dr Rees' case⁵ was undoubtedly one of true leprosy, and I am surprised that any question as to the fact should have ever been raised. Johanna Crawley, Irishwoman, aged 54, had lived thirty years in Stepney. In 1866 had lost part of the first finger of the right hand, and had her body and limbs stained with large brown patches; there was decided anæsthesia as far up as the elbows. The face was puffy, and the lips and ears swollen. In that state she left the hospital. Having made inquiries at Stepney, I have been informed by her daughter, a woman of 25 years of age, that Johanna died in 1874, after losing a part of *all* her fingers and toes, the blisters and destruction of bone causing great pain. She died of inflammation. A Dr Hayden saw her in her last illness, and at once recognised the case as one of leprosy. It may be worth recording, that her daughter's name is Mrs Suckling, 8 Salmon's Street, Salmon's Lane, in case *she* should in time be attacked, as she attended her mother throughout her illness.

¹ *Med. Times and Gazette*, Jan. 1860.

² *Ed. Med. Jour.*, Jan. 1855.

³ Guy's Hosp. Reports, 1859, and Catalogue, p. 210, model 435.

⁴ *Br. Med. Jour.*, 6th Dec. 1873, p. 655; I fully criticised the case in the *Journal* of 3d January 1874, p. 36.

⁵ Guy's Hosp. Reports, 1868, p. 190, and Catalogue, p. 214, models 446 and 447. A similar case is said to have occurred under Dr Gale some years before, but no reference is given to it. (See *Lancet*, 5th Jan. 1867, p. 17.)

Although undoubtedly indigenous, I cannot look on this case as necessarily an antiochthonous one, although, from the information given me by Mrs Suckling, I could not trace any actual source of infection, as her mother never, that she remembers, kept lodgers, and her father had never been abroad,—but Johanna was a sail-maker, working in a factory with many others, and, living in a district crowded with people *in constant communication* with the East and West Indies,¹ and in which there are many coloured people; so that, even before her daughter was born, or while the latter was a mere child, she might have lived in contact with some leper, and the circumstance have entirely passed out of memory before the first appearance of the disease in 1865, so long is the period of incubation. I look on the case as strictly analogous, though not demonstrably so, to cases of yellow fever occurring at parts in direct communication with the West Indies among subjects who have never been abroad, but who are infected from those arriving sick. This is much more likely than that such a case would arise of itself.

(*To be continued.*)

ARTICLE IX.—*Italian Medical Periodicals.* By JOHN BOYD, M.D.,
Slamannan.

IN the days of our youth, when the royal nursery at Osborne was becoming populous, and the Orleans dynasty seemed still firmly fixed on the throne of France, the Parisian schools of medicine stood especially high in professional estimation. The newly-fledged licentiate, who could not only recount the humours of the Quartier Latin, but descant on the profound depths of instruction he derived from the lessons of M. le Docteur Nonpareil at La Quelleprière, and the surgical exploits he had seen performed by M. le Professeur Sansegal at La Sympathie, claimed immense pre-eminence over us home-taught disciples, who in the matter of professional tuition had to content ourselves with the very best. But,

“Nous avons changé tout cela.”

The same redoubtable personage at the present day derives his Hippocratic inspiration from Deutschland; no course of training, if he aspires to the higher ranks of medical status, will avail him unless he can produce vouchers of one or more semesters under Herr Doctor Vielkenner, or has assisted at the operative achievements of Herr Hofrath Riesenthaten, who diffuse over all civilized regions the renown of “Die Medizinische Anstalt im Wunderthale!”

It is quite within the range of possibilities, nevertheless, that in the course of another lifetime, the more ambitious British students

¹ Her house is just beside the Limehouse basin, not quite half a mile from the West India Docks, and a corresponding distance from the East India Docks.

may repeat the current of three and four centuries ago, and crowd the scholastic halls of Padua and Pavia, of Rome and Bologna, of Naples and Palermo, in search of lights transcending those of their nativity; that the Tuscan may be as advantageous an attainment as the German tongue now is, and as essential an element of a liberal education. It is not to be forgotten that the medical school of Salerno was for ages the first in Europe, and that the healing art with its accessory sciences have never ceased to be zealously and successfully cultivated by the countrymen of Morgagni, Scarpa, Calcani, Mascagni, Rolando, Bellingeri, and Tommasini. That the same predilection for German ideas and publications, so strikingly visible among ourselves, now prevails among the Italians, is distinctly shown by the specimen we select,—vol. ccxxxiv. of the *Annali Universali di Medicina e Chirurgia di Milano*,—under the editorial management of Dr Malechia de Cristoforis. In scanning the table of contents, we find in the review department—

59 notices of German authors.

27 " French "

26 " Italian "

A few Russian and Polish writers are quoted, and about the same number from Britain, among whom Mr Annandale and Dr McCall Anderson figure prominently.

The volume in question begins with a continuation of the article by the editor on the subject of the transfusion of blood,—a topic which seems to attract the Southern medical mind a good deal at present, as I see a remarkably neat essay on it in Nos. 1–3 of the *Anales de Ciencias Médicas de Madrid*, by Don José Ustariz; and a shorter paper in the last August and September numbers of the *Gazeta Medica de Bahia (Brazil)*, by Dr J. Remedios Monteiro. The Italian editor treats of the chronology of the question, and in the third period, from 1783 to 1874, claims for his countryman, Michela Rossa of Modena the priority over Blundell, who, in the *Med. Chir. Trans.*, vol. xix., published his experiments on the transfusion of blood. He then proceeds to consider the species in the naturalistic scale of the individual who receives in reference to the subject that confers the blood; the quantity, quality, and physical condition of the vital fluid that is transferred, whether arterial or venous; the modality of the operation; the dangers and possible accidents; and, finally, the aim of the operation, whether experimental or therapeutic. The introduction of the circulating fluid of sheep, lambs, and calves into human veins has been tried in seventeen instances—the first successfully from those of Denis and Emmeritz, 1667; one by Esmarch died when the operation was barely begun; another by Dresser in 1861 presented post-mortem appearances which exculpated the attempt; the others by Albini of Naples, one by Bliedunq, another in the hospital of Wilmington, N. Carolina, etc., had most satisfactory physiological effects. As to the choice of the blood to be transfused, that of his own species is

everyway preferable in man, and the male blood, in consideration of the greater richness in globules, and less proportion of albumen and water, is preferable to that of females. Venous blood *defibrinated* is equally efficacious and free from the risks of embolism. A case is quoted of L. De Belina in 1869, from the *Gazette Médicale de Paris*, No. 2, 1870, which merits attention. This gentleman was in attendance on a Russian lady who was prematurely confined at the eighth month, in consequence of injury from a railway accident. At the emergence of the foetal head at the vulva the neck appeared tightly enclosed in two turns of the umbilical cord, so that it was born asphyxiated, anæmic, violet-coloured, with all the signs of impending extinction of life. De Belina thought then of transfusion: there was no time to be lost, the need of blood was urgent. He took the placenta in his two hands, squeezed out and defibrinized the blood, and with a glass syringe injected it into the umbilical vein of the neonatum. The infant immediately revived; the return of the rosy colour was perceived, the pulse rose, free respiration succeeded, and the life was completely saved.

De Belina has therefore found a new source of blood, and has thus given a most useful practical lesson to the physician and obstetrician.

As to the quantity, experience demonstrates that from 60 to 100 grammes suffice for all indications in adults, 30 to 60 in children, and 25 to 35 in the newly born.

The second paper, by Dr Carlo Bareggi, entitled, "Contributions to the Pathogenesis of Hyperæmia and Anæmia of the Nerve Centres," is a very elaborate and profound enquiry into the minute phenomena of cell nutrition; endosmotic and exosmotic currents; quoting the views of Niemeyer and Jaccoud, and characterizing an expression used by the latter (diminished vitality) as a word void of sense (*parola vuota di senso*), he winds up the essay by using a simile to express clearly his own meaning:—

"Let every nerve-cell, with the interstitial nutrient fluid that surrounds it, be held as a furnace in which carbon burns, *i.e.* transforming itself into CO₂ smoke and ash, developing caloric. In hyperæmia there is, according to my view, a fact corresponding to the addition of much carbon to the furnace, and increasing the ventilation, but leaving rather scanty the exhalation of carbonic acid and the smoke, and insufficient the extrication of the ashes. In this case there is at first observed an augmented development of caloric, but by-and-by the products of combustion gradually accumulating in the furnace and in the limited circumference, the burning becomes ever less active and ceasing entirely, with it also terminating the evolution of caloric. In anæmia there happens instead a fact corresponding to that of adding little carbon to the furnace, and maintaining little activity in the ventilation, but removing completely the ashes, and giving free scope to the carbonic acid. In the latter case there is also an increase of heat by the more rapid

combustion of the carbon and oxygen already present ; but soon the combustion diminishes from defect of combustible material, although this is nevertheless maintained briskly to the end by the diligent removal of its products.

"Therefore, as much in hyperæmia as in anæmia of the nerve-centres, the exaggeration of the nutritive movement coincides with the period of excitement ; the diminution and the cessation of such movement with the period of inertia and depression."

After a short sketch and diagram of a galvanic-caustic apparatus by Dr Mucci Domenico, the remaining 126 pages of the volume are filled with extracts from the various sources previously referred to ; and which, suffice it to say, constituted good solid professional reading, occupying profitably the spare hours of several days.

More national and self-contained appears the *Gazzetta Medica delle Calabrie*, published in Cosenza, edited by Dr Felice Migliori, assisted by a committee of fifteen gentlemen, who elaborate what appears to be the organ of the profession in the southern Italian provinces. It commences by an address by the editor, delivered at the inauguration of the Scientific Conference of the Medical Corporation of Public Assistance, in Calabria Citeriore, at the Ospedale Civile in Cosenza in May of last year. He states that the hospital, formerly placed in one, then another disinhabited convent, the narrow cells of which, converted into wards, became an ill-regulated poorhouse, where poverty and misery of all sorts were heaped together in squalor and neglect, is now placed on a proper footing, restored to its early and appropriate site, and under the superintendence and support of the provincial representatives—exclusively applied to the cure of the sick and hurt, and the interests of science as well as humanity adequately attended to. The Children's Hospital he mentions as requiring special care, as 500 deaths of infants occur annually, a factor in the scanty increase of the population of a wide and rude district, which contained in ancient times such vast numbers of inhabitants—the Sybarites alone amounting to three millions ; the cities of Magna Grecia, flourishing as much by their teeming thousands as by their exuberant cultivation. In the Middle Ages Cosenza itself had a population of 100,000 ; but wars, barbarian incursions, malaria, and earthquakes had almost eradicated the indwellers, and now the *Brofotrofia* is the vortex that engulfs what should be the annual increase.

The agglomeration of so many children in one building, vitiating the air by the frequent respirations and abundant and foetid excretions, alter their constitutions and expose them to overwhelming epidemic invasions. "Ophthalmia, blefarophthalmia, angina, croup, diphtheria, thrush, noma, pneumonia, dysentery, and hydrocephalus, attack them almost constantly ; and where the absence of women's milk, or of a suitable lactation, generate marasmus and collapse, these, aided by the deleteriousness of the impure atmosphere, inexorably kills the innocent victims."

It is satisfactory to learn that the hospital in question is now in a more creditable condition by the care of the presiding authorities. Clean and dry rooms are now provided, fitted up with iron cradles for every two infants, filled with mattresses, waterproof sheetings, counterpanes, and muslin curtains, also a decent bed for each nurse—giving a promise of less mortality and greater success in rearing the tiny objects. A judicious dismissal of nurses as *they run dry*, and fresh *wet* new-comers installed in their stead, is emphatically insisted on. The daily average of the alimentation of the women is also pointed out as not to be neglected. From the researches of Beauchaud, confirmed by those of Parrot, it appears that children of a month old suck on an average 650 grammes of milk in a day; hence it follows that a nurse on whom devolves the duty of alimentering a pair of infants must furnish them with 1 kil. 300 gr. of milk per diem. In order to render it possible for a female to secrete this enormous amount of plastic material, it is necessary to supply her with a proportionate quantity of victuals in which the albuminoid elements, the hydrocarbons, and the saline materials should present themselves in sufficient quantity. The actual feeding of the nurses, not being as yet founded on fixed principles, is defective and absolutely insufficient to attain the end aimed at, and will require to be carefully considered and regulated. It is equally imperative to provide them with a decent uniform instead of the ragged ugly *duds* they bring with them. The indispensability of a properly endowed school for midwives in connexion with the foundling hospital is set forth in eloquent terms, and the full gliding flow of the Tuscan composition, set off as it probably was by a high Neapolitan accent, is apt to make one wishful of having been present at the delivery of the discourse.

A practical paper on Diphtheria and the Sulphate of Iron, by Dr Michele Fera, comes next, wherein Il Dottore avers that the malady referred to is a local parasitic disease, caused by the presence of a vegetable parasite (*zicodermus fuscus*), and being nearly certain that the organism takes its seat primarily in the respiratory mucous membranes, selecting specially the pillars and tonsils, his object was to find a substance that acted as a direct poison on such parasites; which desideratum he believed to have attained by the local application of the pulverized sulphas ferri by means of a hair pencil to the site of the diphtheritic exudation, rubbing it in briskly twice a day. The author cites eighty successful cases subsequent to the use of the remedy, part in Cosenza and part in his native district of Celläre, where it has come into popular use from its unvarying favourable issue. Whatever may be thought of the pathology, the application is feasible and worth trying. An analysis of some poisoned barley, which had been fatal to some hens in the village of Mariotto (Bitonto di Puglia), by Professor Nestore Proto-Giurleo; and arsenic, discovered by the ordinary reagents, precedes a short treatise on Sub-lingual Mucous Tumours in Infants, by Dr Ed. Pandolfo Mormanno, which merits quotation;

the author founds his views on the observation of five cases—a fibroma inserted in the mucous membrane of the tongue.

Some time ago I was favoured by receipt of a publication from *Via de' Pontifice*, No. 55, Roma, addressed—Al Signor, Medico Condotta in Slamannan, which proved to be No. 6, vol. v. of the *Archivio Clinico dei Medici Condotti Italiani*, an organ of the class corresponding to the parochial medical officers of our own country. In this publication the very wrapper is brimful of matter, as the programme is inserted in the first inside page, stating succinctly the object of the periodical, that of a compendium of the discoveries, views, and labours of so many thousands of municipal practitioners, scattered up and down Italy, all of whom who have anything special to relate are invited to co-operate.

The opposite side resembles the penultimate page of the *British Medical Journal* in containing intimations of vacant professional appointments. It struck me that the Italian communes must be most laudably liberal to their medical officers, as witness the salary offered by Gargnano (Brescia), £2500. Patrica (Roma) offers two appointments, one £2100, the other £1800, free from taxes; Calvisano (Brescia), £2500, tax-free also; Meldole (Mantova), £2000, tax-free; Ponte S. Nicolo (Padova), £1500, for the poor alone; Guastalla (Piacenza), £2000, with a horse provided; Mapello (Bergamo), £1850; Cerano (Novara), £2200; Frontone (Marche), £2500, with house and horse provided. At Clausette (Udine), a physician-surgeon-accoucheur is offered £2000. *N.B.*, the country is hilly, but the footpaths are systematic. On reading these announcements, one is tempted to seriously think of furbishing up their old Italian exercises, and “putting in” for one or other of these lucrative situations; but further consideration suggests that *lire*, not *pounds sterling*, was meant, and that the salaries we derive from our parochial boards, if counted in *ninepence-halfpennies*, with the figure £ prefixed to the amount, they would not at first sight appear so scanty and inadequate as they too frequently are.

It is satisfactory to find announced in the *Notizie Professionale* that Dr George Battista Massaro has been placed in repose with a pension, after forty years' service, by the municipality of Panicale. Di Cancioni at Pescostanzo, Drs Gentili and Cantalamessa at Nocera Umbra, Dr Ricchi at S. Archangelo di Romagna, Drs Calori and Foschini at Meldola, Dr Tito de Medici at Coriano, Dr Baduloni at Leonessa, Dr Antonio Angelini at Misano, etc. etc., have received handsome additions to their stipends, in acknowledgment of the zeal and science manifested by them in the discharge of their official duties. Let us hope that parochial boards nearer home will be fired with a noble emulation of such praiseworthy procedure on the part of their peninsular prototypes.

The first original article is one on Osseous Aneurism, with details of a case by Dr Vincenzo D'Arpe, of the island of Elba, who also concludes the number with a short paper on the antiseptic uses of

phenic acid in surgery—both of these sufficiently well reasoned and described to have qualified the writer to have taken professional charge of the ex-imperial constitution, had he been contemporaneous with the short exile of Napoleon I. within his bounds. Dr Aurelio Vigilanti, of Pomerance, has a short paper on Catarrhal Pneumonia, wherein he describes the malady in question much in the same terms as one would employ to depict its causation, course, and terminations in our Scotch moorlands, and calling for the same sort of treatment. The most lengthened and elaborate of all is an article on Epidemic Cerebro-spinal Meningitis, by Dr Bonaventura, Messina, medico condotto in Marsuenuovo, which, as it may be salutary to our insular self-appreciation to realize that the parish doctors in some foreign countries may be as far advanced as ourselves, I translate *in extenso*.

“The cases of epidemic cerebro-spinal meningitis, observed by me in the second fortnight of December last, refer to two boys, both belonging to the class of poor country people. The first of these, aged five years, had enjoyed good health up to the invasion of the malady, although of a weak and delicate constitution. He had been confined to bed for eight days when I was called to see him. I noticed in him a state of considerable general depression. He lay in a supine position, almost entirely deprived of consciousness, scarcely emerged from this condition by force of stimulation, quickly falling back, coma supervening, interrupted by convulsions more or less violent in the face and extremities. Respiration somewhat anxious and frequent; the pulse small, unequal, and evanescent. He had spasmodic contractions of the extensor muscles of the head, which was drawn backwards, with marked prominence of the anterior region of the neck. The superior and inferior limbs were completely relaxed; in these as in the trunk the sensibility was entire, in some parts rather exaggerated, causing a slight stimulus to occasion preternatural convulsions. The thoracic and abdominal organs appeared in natural condition, excepting a moderate intestinal meteorism; tongue foul and humid; constipation, by the maternal accounts, had occurred from the first day of illness. Temperature (axillary) $37^{\circ}5$ morning, and $38^{\circ}2$ centigrade in the evening.

“From minute interrogations made to members of the family, I learned that the boy had sickened after having been exposed to rather severe cold and damp, prolonged for many hours. It commenced by cephalalgia, pains at the nucha and down the spine, followed by contractions and convulsions, nausea and vomiting of biliary matter and indigested food, with little appreciable elevation of the temperature. This train of phenomena did not greatly alarm the persons watching at the couch of the little patient, hoping to see him better perhaps next day; the voice of family affection being often silenced among destitute people by the absolute want of means of succour, sought out only at the moment of extreme

desperation. The anxieties of the parents were awakened only when the boy was unable to stand erect; the difficulty increased in the deglutition of liquids regurgitating by the posterior nasal fossa; the headache and spinal pains becoming more intense. On the ninth day of the disease, that of my second visit, the same symptoms became more pronounced; the respiratory anxiety increased, the opisthotonos more marked, the contractions and tremors along the limbs more frequent; the eyes fixed with permanent dilatation of the pupils; death shortly ensued after general paralysis."

The second subject of the malady was a strong robust boy of eight years, employed in tending sheep, and therefore exposed to storms and rapid changes of temperature.

"His father informed me that a week previously his son had been exposed to rain and intense cold. Coming home in the evening he seemed anxious to go to bed, where he was seized with cold, followed by most violent fever and severe pain of head and spine, causing him to cry loudly. Unable to remain in the same position he became almost maniacal, was irritated at every object that came before him, at one time throwing himself out of bed, which he could not regain without assistance. A little afterwards there supervened tonic and clonic convulsions of the whole body, with rigidity of the neck, which prevented movement of the head. The following morning the violent fever continuing, to the neck-rigidity spasmodic contractions of the head-extensors became superadded, deglutition and articulation very difficult. He had besides many attempts and some effective vomiting of mucous and bilious matters; the giddiness increased; the face red-spotted, and the eyes became injected and as if starting out of their sockets.

"This deplorable state of the little patient, always growing worse, constrained the parents to seek assistance. Neither leaving their farm-house, which was some kilometers distant in the country, they thought it sufficient to send to a druggist for some medicine for the sore throat, which they thought was the matter with the boy, and get some gargle for him, which, as was to be expected, was as stuff thrown to the winds. The symptoms of the disease augmented to those of imminent danger, causing them to renounce all hopes of recovery.

"On the sixth day, less with the idea of searching for the means of recovery than for that of bringing the unfortunate to the village for the *funeral obsequies and interment*, the parents resolved to bring him here, and next morning I was asked by persons external to the family to visit him.

"Depressed in the most extraordinary manner, he lay on his left side, the dorsal decubitus being impossible for him from the retroflexion of the head and trunk. The superior and inferior extremities were in complete relaxation, alternating with muscular contractions and subsultus tendineus, the sensibility entire, and the reflex

motion exaggerated. The patient had a terrified aspect, the cheeks reddened, and the eyes injected and shining, with internal strabismus, dilated and nearly immobile pupils. Consciousness by no means gone, he muttered some broken words—in fact, he showed he understood me when I insisted on asking about his headache, he signed by clutching desperately with his hand on the hair. There was incomplete trismus, so that I could hardly satisfy myself about the so-called throat-disease, which part was quite sound. The tongue was moist, coated, and dark coloured, perhaps caused by the application to the mouth of a solution containing *nitras argenti*. Temperature 38° C.; pulse frequent and arhythmic, with 27 respirations per minute; thoracic organs perfectly sound; spleen and liver in their physiological limits; fæces and urine discharged involuntarily.

“At 10 A.M., on the following day, which was the last of my visits, the contraction of the posterior muscles of the neck and trunk attained to the determination of one of the most prominent forms of *opisthotonos*; frequent and general tremors attacked the body; the face still more fear-stricken; the anxiety of respiration more oppressed, with remarkable irregularity of the pulse; consciousness completely lost; pupils dilated and insensible, with permanent turbidity of the left cornea. With this train of phenomena, accompanied by an abnormal lowering of the temperature, the patient became agonized, and died shortly afterwards.”

From this summary exposition of the facts presented by these two cases of cerebro-spinal meningitis, it becomes obvious how characteristic of the disease in question is the almost instantaneous invasion, without prodroma, in the midst of perfect health, of its more salient features, such as cephalalgia, rachialgia, vertigo, convulsions, contractions, dysphagia, vomiting, elevation of temperature, etc., etc. This nosographical type, nevertheless, undergoes various modifications, referable in different individuals to the intensity and course of these same symptoms. In the first case, for example, the fever was of the shortest, exactly corresponding to the process of augmented nutritive activity determined to the pia meninges. In the second the temperature was high, and remained so to the penultimate day of life, although he had capricious remissions and exacerbations, without regularity. And there was something more. In some instances the fever assumes an aspect decidedly intermittent, which feature is absolutely absent in others,—which is truly surprising, considering it as a malady,—the cadaveric alterations of which are entirely those of the most acute inflammation—that it should not determine any elevation of temperature, with varieties in the pulse, which in many cases is even reduced. The pain of head and spine—a most valuable sign in this disease—by its frequency and being felt from the first, has not always the same character. The seat almost constantly is in the frontal and occipital, the nucha and cervical

regions, diffusing itself therefrom to other parts of the head or spine, and accompanied by cramps or chronic convulsions. Frequently the agony is so atrocious as to extort cries from the patient; at other times they are gravitive, pulsative, and lancinating; sometimes there are lesions of the sense of hearing, often pains in the cavity of the orbit or complete loss of one eye, a simple diplopia, which, according to the observation of Professor Tommasi, may continue even to the completion of the cure. Amidst the increase of muscular contractility, especially in the posterior muscles of the back and the neck, the tonic and clonic convulsions, in the disease in question there is no noticeable vocal disturbance to be found. The cutaneous sensibility remains intact; and the incapacity of motion—what is not to be confounded with the gradual enfeeblement of the muscular power with general collapse into which the affected fall—is an exceptional symptom, only to be observed in cases where some complication exists.

More important are the lesions of the intellect, which is more or less disturbed according as the various portions of the centre of innervation are implicated, whether by inflammation diffused through the pia mater, or by mechanical and hydraulic disturbance. At the commencement of the disease the symptoms of cerebral excitement prevail over those of depression. The patients are restless, the insomnia is usually complete, and they begin at times to waver. The character of the delirium, however, is variable; sometimes it is quiet, taciturn, or accompanied with vague and broken words; sometimes it is furious, quarrelsome, and vociferous; according to the observations of Tourdis, the mental excitement may rise to manifest alienation. From the rapid change of ideas and their slight coherency, logical, clear, and ordinated, thinking becomes impossible, so that the patients affected may easily be seized with hallucinations and illusions, inasmuch as they are unable to discriminate between the subjective ideas and the products of real perception. When to the stage of excitement follows that of cerebral depression the sufferers become indifferent and apathetic, lose consciousness, and are insensible to all stimulation, and inclined to sleep, from which it is impossible to arouse them, profound coma supervening. The excitability of the ganglia and fibres of the nerve-centres which preside over the movements being diminished or suspended, these last are impaired or abolished. Even the respiration becomes slow, deep, and stertorous, the heart beats with increased rapidity, and the pupil dilates, from the diminished excitability of the vagus and by the prevalence of the sympathetic fibres of the iris over the others.

Epidemic cerebro-spinal meningitis has only received that name between 1837 and 1838, when it was diligently studied and described by Lamothe and Lespes, having suddenly arisen at Dax, department of Landes, and well illustrated by Faure-Villars, by Chauffard, Lefevre, Forget, and by Lourdes in the epidemics

observed by them at Versailles, Avignon, Rochefort, and Strasburg. For a few years subsequently it retained the same denomination, while at other times it was known by that of *ataxie cerebral fever*, by *convulsive typhus*, while our De Renzi entitled it *tetanic apoplectic typhus*, which the same author a few years afterwards changed to *morbo-convulsivo-epidémico*.

Before the present century no certain notices as to the existence of this malady can be found. The *phrenesia maligna* described by Prospero Alpino, the epidemic mentioned by Rumelius and Foresto, the *cephalea epidémica* which appeared in Sicily, especially in Palermo, and in Basilea described by Ingrassia and Platero in the sixteenth century, have, it seems, little or no similarity to the cerebro-spinal meningitic epidemic, which instead is found to present analogies to the disease which affected Geneva in 1805, and described by Vieussensio exactly under the name of *febbre cerebrale atassica*.

Similar to other epidemic maladies, the meningitis in question has held an irregular and erratic course. From 1805 until 1843 assuming a development gradually more and more intense and continuous, it visited almost all the states of Europe, with the exception of Belgium. France, especially, was attacked as if by preference. According to C. Broussais, who has diligently collected the most important notices contained in the documents addressed from the military medical officers to the Council of Sanitation, this disease displayed itself first at Bayonne in 1837, spread to the Landes and to the communes around Dax, pursuing its course to Metz and Strasburg. In the same year it seized the garrisons of Bordeaux and Rochelle, and, radiating in various directions from these two cities, found its way to Versailles, again to Metz and Strasburg, Nancy, Colmar, extending onwards to Laval, Chateau-Goutier, L'Orient, Tours, Amiens, Nantes, etc. Besides these lines, the epidemic meningitis followed out another, which commenced at Narbonne and Foix; in 1839 it attacked solely the garrison at Nismes; then at Avignon, at Montbrison, Lyons, and Perpignan, halting and taking Aigues Mortes in its return the following winter.

While France was affected, Italy also suffered from its ravages. Naples, Savoy, the Roman States, the Basilicata, Terra di Lavoro, Bari, Otranto, the Principato Ultra, Puglia, and the Calabrias give an extraordinary contingent of persons sick of this malady, between 1840 and 1841, studied and described by our late professor De Renzi, who went on special commission to the provinces affected. It reappeared in the year following, but much more slightly, and from 1850 to 1860 it only occurred sporadically in upper Italy, particularly in the military hospital at Alessandria. Between 1844 and 1851 it was observed at Gibraltar, at Philippeville in Algeria among the Arabs, in North America, and again in Europe, where the first visited country was Ireland, then the

Danish States, Sweden, Norway, and France. In 1852 it manifested itself at New York, where it abode about ten years, causing immense mortality. In 1863 the epidemic visited the hilly country at the Spanish borders, on the right banks of the Tagus, whence it was propagated with malignant character on the plains of the south, attacking Lisbon and Oporto. At Dantzic, in Western Prussia, in some provinces of Bavaria, and other German territories, also in Austria, it took rapid extension in 1865, although in the latter state it had a very mild course.

In 1874 and 1875 it reappeared in our southern provinces, particularly in Spinazzola, Mincivino, and Castellana in the Barese, in various points of the Salernitano, in the provinces of Capitanata, Foggia, and Naples, where in March 1874 it assumed the proportions of a minor epidemic, in Sezione, S. Fernando, according to the account of the eminent Dr G. Amoroso. To Professor Tommasi belongs the merit of having recognised it the first in Naples at the Hospital Gesu e Maria. *Apròpos* of this, the illustrious clinical physician called the attention of his colleagues to a special malady which he believed could be classed with the acute cerebro-spinal meningitis, which Dubini of Milan termed *corea electrica*. Of this "il gran maestro" has discoursed in the summary of the clinique at Pavia, where many cases were observed, and he believed in its epidemic and contagious nature, while all the Lombard physicians had regarded it as purely nervous. The symptomatology of it may be shortly reduced to the following items: A limited muscular contraction, similar to that produced by the electric current, multiplying and spreading itself till the paralytic follows the convulsive form, and to this paralysis of the respiratory muscles, coma, cephalæa, fever, which last is wanting at first; the ordinary termination is the fatal. Approximating the one to the other malady, he believes that both are the products of one specific cause, and that Dubini's disease is essentially the same as the malady under discussion, although a certain variation may be apparent in their clinical form. In my two cases I had not, in truth, to allay the convulsive quivers of separate fascia or even of muscular fibrils, but I certainly did notice in them tremors of the entire limbs, with alternate flexions and relaxations of the same; also permanently diffused all over the body involuntary convulsive agitations, with cessation of the voluntary movements.

Although our science has not yet said the last word as to whether the epidemic cerebro-spinal meningitis is to be classified among the infectious diseases or in the ordinary category, yet the clinical facts appertaining to it, observed in the phenomena presented by it in all the European countries, tend to the opinion that in its origin it is almost exclusively contagious. Indeed, the cases of instantaneous death, the symptoms of fulminating chorea, the striking disturbance of the cerebral and spinal functions, the lethal exhaustion observed in this disease, are facts, among others,

sufficiently eloquent to cause us to admit a specific nosogenic agent, a miasma originating in the soil or in the atmosphere, capable of thinning and altering the crases, the physical or chemical constitution of the blood, poisoning the globules specially, and the nerve-cell elements, localizing itself in the cerebro-spinal axis by special predilection.

This specific agent, however, does not appertain to the category of those which reunite the properties of miasms and contagions. Of itself it is incapable, being absorbed, of producing a series of cyclic chemico-pathological processes, reproducing its germs, which could be transmitted from the sick to the sound. I can affirm that in none of the families of my two patients was there any repetition of the same morbid phenomena. It is undoubtedly to be remembered that unusual and abrupt atmospheric changes, extreme cold, meteorological conditions, and rheumatic influences, predispose the organization more easily to be affected, determining the specific morbid influences on the pia mater. The history of this terrible malady in the districts above referred to testifies that the malady prevailed more frequently in the winter months than in the other epochs of the year. Concurrently as auxiliary causes the unfavourable hygienic conditions are to be considered—the insufficiency and inferior quality of the food; the dwellings, in low and damp situations, over-crowded and ill-aired; the immoderate and prolonged muscular exertions to which those affected have been previously subjected, placing them in a state of receptivity to the malady. The age and constitution are also important factors; boys, youths, and adults, those with strong constitutions, are more frequently disposed to epidemic cerebro-spinal meningitis than the others.

The principal anatomical notices of this disease by pathological anatomists reduce themselves to the following, especially those of the eminent Professor Schrön:—1. Dilatation and engorgement of the large and small veins of the pia mater, cerebral and spinal; 2. Augmented consistence of the brain in totality, with constriction of the sulci between the convolutions; 3. Turbidity of the cerebro-spinal fluid; 4. Fibrino-purulent exudations between the arachnoid and the pia mater of the cerebellum; with, 5, Ramollissement in the central canal of the latter.

The course is very various; most frequently it is rapid and then usually fatal. At other times it is prolonged to beyond the second month, with gradual and progressive signs of recovery, sometimes capricious, insidious, and rendering the prognosis extremely difficult. The following symptoms, however, are always unfavourable and disheartening—permanent coma, intense delirium, tetanic contractions of the spinal muscles, strabismus, and the other indications of adynamic typhus.

The “*sindrome fenomenica*” of the malady previously referred to, the abrupt invasion, the almost instantaneous appearance of

vomiting, excruciating headache and tetanic contractions in the cervical-dorsal region, the extreme prostration, the development of striking cerebral phenomena, delirium, and coma, and, above all, the irregularity of the febrile characters, beginning, perhaps, with the highest cypher of intense inflammation, or presenting an intermittent or remittent type, as signified by the thermometric grades of collapse—all these are positive criteria enabling us to diagnose surely the presence of this malady, and separate it from any other. Typhus, which might most easily be confounded with it, presents under all the aspects—anatomical notes, symptoms, course, and duration—characters so precisely different as to prevent the clinical observer from ever regarding as identical the two diseases. To separate from the fact, not less important, of the instantaneous and tumultuary invasion—not characteristic of typhus—of the epidemic meningitis, it does not present the splenic tumefaction, and none of the gastro-intestinal, respiratory, and cardiac lesions, while there constantly remains the alteration in the envelopes of the cerebro-spinal axis, which here represents the special localization of the infecting principle. In typhoid we never have from the commencement the intense, fierce rachialgia, nor the spinal muscular contractions; the symptoms in these two pyrexiaë assume a gradual and progressive intensity. Most important, above all, is the differential diagnosis we derive from thermometrical observations.

From the cyclic table of typhus, and still more exactly in typhoid, we can distinguish by thermometric observation alone the exact nature and regular course of the malady with which we deal, contrasting forcibly with the irregular and inconstant character of those of epidemic meningitis.

The chemical investigation of the urine offers a most precious element of differential diagnosis. The phosphate of lime, which becomes more and more abundant in the malady in question, disappears gradually in typhus, and is absent in the end; and while urea in more or less quantity is found from the first stage of meningitis, this is absent in typhus until the completion of its course.

Less embarrassing it is always to distinguish between epidemic meningitis and the pernicious fever of malaria, with nervous and cerebral complications. The differential criteria consist principally in the never-failing splenic tumour, the dirty yellow colour of the patient, the precedence of other paroxysms, the special character of their periodic returns, combined with the other phenomena indicative of the fever from palustral infection. True it is, nevertheless, that in the most violent forms of cerebro-spinal meningitis, when death ensues in very short time, as if from fulminating toxemia, the diagnosis is attended with much difficulty, only to be ensured by means of the anatomical scalpel.

Finally, the discrimination between sporadic and epidemic meningitis is founded on the sudden invasion, on the greater intensity, rapidity of the symptoms, and the very short course of the latter.

The presence of the dominating epidemic has the weight of an important distinguishing rule, particularly when all the other facts concur to the same conclusion. As in typhoid fever, so in epidemic meningitis, the development of the malady from a multitude of small circumscribed foci may occur, rightly termed by Griesinger *Residential epidemics*. It is not yet known, it is true, the *how* or the *why*, the spontaneous generation of the poison occurs in certain individuals. This much is certain, however, that bad hygienic conditions exercise a most potent influence on the development of these two diseases, and the interpretation of Stich on this point is almost generally accepted, and seems the most satisfactory. He avers that "the animal organization always includes in itself materials of putrid poisoning, whether contained in the intestinal or in the pulmonary exhalations, and that in normal conditions the noxious influence of these products is annihilated by the functions even of the mucous tissues, whether by rapid elimination or by transformation of reabsorbed materials. But when by some disorder those salutary compensating operations become imperfect, the putrid materials may give scope to the poison, and thus the disease is generated exclusively within the organization itself."

As to curative means very little can be said, especially as I had no opportunity of proving the efficacy of any medicine, having been called to see my two patients almost in their agony. Not knowing the special cause of the disease, all that is possible is treating for symptoms. The minute observance of hygienic precepts undoubtedly takes a first place in the prophylaxis of all contagious maladies: how important this must be in the malady in question is easily understood. Unhappily, however, I may incidentally mention, neither public nor private hygiene have yet attained to that perfection which is desirable, and which for a long time yet will not be possible to apply to pauperism. We *Medici Condotti*, who are always in contact with the different elements which constitute the family, living among them, acquiring an ascendancy over them equivalent to that of the clergymen—we alone can describe the squalor of the poor and of their huts. Among the debased and lowest class of poor (Italian) country people there is often little distinction to be seen; they combine the habits and the acts of animals—rushing instinctively, and moved by desperation, to unheard-of deeds of ferocity. Under such unhappy circumstances the observance of the most indispensable hygienic precept is for them an unsurmountable difficulty; for them awaits the fatal destiny of being attacked by preference by every species of malady—more especially those of infections, contagious nature, by which in part arises the decimation of the population. Up to a time not remote many believed there was a most powerful remedy capable of obviating all accidents in the infected individual, removing the action of the poison, and, according to the common expression, cutting short the disease. Such

remedy—termed amphlogistic *par excellence*, or contrastimulant in general—was thought to consist in repeated venesections, *coup sur coup—usque ad deliquium mortis*. This, now-a-days, is held as a grave error, to be combated to the utmost in modern medicine, which, persisting in the experimental direction, has banished as extremely dangerous this blood-spoliative method with which the thaumaturgist doctors or professed blood-letters believed they could conquer, tame, arrest, dissipate every morbid process that terminated in *itis*. More useful instead the application of leeches to the mastoid processes might be found, especially when collateral congestion is observed, repeated as often as might be found necessary. According to the observations of the celebrated Professor Tommasi, the daily administration of calomel for the first week is of benefit; he afterwards recommends the permanent application of bladders of ice, the almost daily tepid bath for a quarter of an hour, and the free use of bromide of calcium even to 7 grammes per diem. The administration of iodide of potassium is of little use, and quinine has given no satisfactory results, even when the fever has shown a character decidedly intermittent. Finally, it is unnecessary to say how indispensable it is during the course of the disease to sustain the strength of the patient by feeding him with concentrated soups combined with stimulating mixtures, particularly in the extreme depression of strength, and in the adynamic forms.

Note by Translator.—Might I venture to suggest to Dr Messina *con rispetto parlando* that the application of leeches and venesection is the same treatment in kind, differing only in degree, and that in Italy as in Scotland there may be found practitioners of *modern medicine*, highly accomplished histologists, pathologists, therapeutists, etc., who, when certain acute cases confront them, evince hemophobia and eschew the lancet: *they don't kill their patient, but let the man die*.

Part Second.

REVIEWS.

Les Etats-Unis: Notes sur l'Organisation Scientifique Les Facultés de Médecine, Les Hôpitaux, La Prostitution, La Syphilis, L'Hygiène, etc. Par le Dr A. GUICHET. Pp. 175. Paris: V. Adrien Delahaye et Cie: 1877.

DR GUICHET'S Medical Notes on the United States are the result of a brief visit which he paid to that country last year, on the

occasion of the great Centenary Exhibition at Philadelphia. The hospitals, medical schools, and medical institutions of all kinds are briefly described. New York has forty-six hospitals and dispensaries, the greatest of which is Bellevue Hospital, which receives about 12,000 patients annually; is attended by nearly 500 students; and has forty physicians. Dr Guichet notes that the wards are small (containing not more than eight or ten beds), well-ventilated, clean, and very cheerful. He thus contrasts their aspect with that of the long wards of the great Parisian hospitals.

"All these little wards are clean and cheerful. Less richly decorated certainly than many of the wards of our great hospitals, they are well-ventilated and well-lighted; they have quite a joyous aspect, and do not recall to the wounded man that he is in a hospital, as do long wards with their fifty or sixty beds, where, in the evening, the patient, surrounded by his companions in misfortune, feels alone and frigid with fear, having no sight to cheer him save the austere head-dress of the *sœur de Charité*, who—gliding rather than walking—suddenly disappears in the gloom of the imperfect shadow of a trembling night-light. The little wards of Bellevue Hospital have a totally different aspect, imparting a feeling of satisfaction and cheerfulness which soon transform places of suffering into places of recovery."

The paragraph now quoted strikes the key-note of the reform most needed in the construction of large hospitals—the substitution of small, well-ventilated rooms for long gloomy stuffy wards.

The author gives a view of the state of *prostitution* in its relations to syphilis, public decency, morality, and public health, which is not flattering to the citizens of the great transatlantic republic. The picture of prostitution in New York is indeed so appalling that we are disposed to think it overdrawn and too highly coloured.

"The town of New York," says the author, "possesses an immense troop of girls, who, without police control or medical inspection, publicly abandon themselves to their filthy trade, impudently parading their immodesty in many streets. Prostitution is free; there are no '*maisons publiques ou de tolérance*,' and, on the pavement, in the evening, strangers are elbowed every moment by walking harlots, or solicited by women stationed within the doorways of their houses. This traffic corresponds to that of the most shameful thoroughfares of Paris; but it is on a larger scale, for whole districts are invaded by it. Do not suppose that this state of matters exists only in the wretched streets of the low town, adjoining the quays, in the 'dancing saloons' of which there swarm sailors of all nations paired with all sorts of women. Do not suppose that this shameless traffic is pursued only in such localities as the Fourth, Sixth, and Seventh Wards, the neighbourhood of the prison called The Tombs, the famous crossing of Five Points, Rotten Row, or Misery Street. It is also met with in the much

more central streets near Broadway and in Broadway itself. There is only a little difference in outward appearances. It differs from that horrible hole adjoining the quays of the East River, where the refuse of the seafaring community, even the Chinese and the negro, are to be seen lavishing their caresses upon degraded women of white blood. In Twelfth Street, at the corner of Broadway and Fourteenth Street, and in Union Square, you will meet a sensational class of prostitutes, displaying outrageous toilets. In Broadway there is a different style—there you find ‘bars’ and brilliantly-lighted gardens, before the doors of which there are men walking up and down, who give printed advertisements to the passers. These advertisements generally present the head of a young and pretty woman, and the address of the house, with these words printed below,—‘20 ladies in attendance.’ Upon one occasion a paper of this description was handed to me promising a service of 40 ladies. On entering one of the gardens to drink a ‘sherry cobbler,’ or any of the mixtures so much esteemed by the Yankees, you are served by male waiters, and not by the women, who only come to sit beside you and invite you to walk into a private room, where you will be much more comfortable. Prostitution has only this very thin veil; but it has it, and with it American society declares itself to be satisfied.”

“Proceeding more into the heart of the upper town, from Thirtieth Street to Thirty-fifth Street, we find that while prostitution is not less common, it is more veiled. The streets from Twenty-sixth to Thirty-fifth Street, which the other day were in favour with the fashionable world, have, says Simonin, in his *Souvenirs de Voyages aux Etats-Unis*, been in part given up to gaming-houses, and houses of a still worse description, where fast men hold their meetings in permanence for the night. New York, he adds, is assuredly the most debauched city in the two Americas. In this quarter of the town, it is often necessary to be presented at the house of a *respectable* mistress. Once the introduction has taken place, conversation begins just as in a drawing-room of good society; the key-note is struck by the flow of champagne—groups form—the signal is quietly given, and couples disappear. Thus is it that the development of prostitution takes place with a rapidity of increase which is astounding, wallowing in the mire of the low and filthy neighbourhoods, and concealing itself among the flowers of the new and rich quarters of the town. There is no police regulation subjecting the women to medical examination; there is no regular or irregular inspection; and no dispensaries. It is not till the infected prostitute is so seriously out of health as to be unable, without suffering pain, to continue her ignoble life, that she presents herself for medical examination. Those who have the means are attended at their residences; and the poor are sent by the receiving physician to Charity Hospital in Blackwell Island. After being cured, they are kept for some time

in the workhouse, with a view of obtaining as good a guarantee as is possible of their inability to transmit syphilis. Under the circumstances now described, it is not astonishing that there should be the enormous number of 61,705 venereal patients, of whom 50,450 are syphilitic, in a population of 942,294. These figures clearly demonstrate the utility of placing prostitution under regulation and surveillance. Sanctioned brothels [*maisons tolérées*], it must be admitted, are a shameful necessity of the age we live in—a necessity imposed on our healthy young men [*nos jeunes hommes valides*] by the increasing difficulty which they experience in keeping up an establishment before they reach the age of twenty-six or twenty-eight. What proportion of our young men can, like Montaigne's father, delay the first sexual intercourse till they marry at thirty?"

The author says more in the same strain on prostitution, interspersing his statements with medico-social opinions, generally unsound, and frequently absurd when considered in the light of well-known facts. To substantiate and illustrate this criticism, we quote the following lines:—

"I do not hesitate, then, for one moment, to raise my feeble voice against every demand for the suppression of police supervision and control—for they are the only means of preventing indecency in public places and on the foot-pavements, and of securing to the country [France] vigorous and handsome generations [*assurer au pays de vigoureuses et belles générations.*]"

In no country in modern times has prostitution been so much inspected and controlled as in France; and yet in no other country has there been a steady diminution in the number of the people and a progressive degeneration of race. The proportion of births to the number of the population is diminishing in France with remarkable regularity and constancy. The proportion in ten decennial periods from 1801 is thus given in the "*Traité d'Hygiène Publique et Privé*," by Dr A. Proust of Paris, which has just appeared:—

1801-1810	.	.	.	32·9
1811-1820	.	.	.	31·7
1821-1830	.	.	.	30·6
1831-1840	.	.	.	28·7
1841-1850	.	.	.	27·5
1851-1860	.	.	.	26·1
1861-1870	.	.	.	26·3

In Prussia and in England the *natality*—to Anglicise Dr Proust's word—is respectively 38·1 and 35; it is, and long has been, increasing in both countries. These figures show that France requires more than the maintenance of rules for the regulation of prostitution to prevent a steady decrease in the number of its people; for the rules and the decrease have co-existed. Together with the numerical decrease, there has been a progressive degeneration of race—a fact

which at present is attracting much attention in France and elsewhere. When—in a future number—we speak of Dr Proust's admirable volume, we may go more into these and other cognate questions. At present our object is to show in passing that Dr Guichet is exceedingly mistaken in supposing that generations of vigorous Frenchmen can be secured to France by the maintenance of its system of regulating prostitution.

Dr Guichet, during his very short visit to the United States, could only have had a mere glimpse at their social manners and usages. Being a foreigner, and a traveller on a flying jaunt, it is not remarkable that he should have misunderstood and misinterpreted peculiarities which he observed or heard discussed by other foreigners in hotels, steamboats, and railway carriages; but it is wonderful that he should have considered himself justified, from alleged personal observation, to write and print a judgment upon the inner life of a great nation, different from his own in language, in social forms, in education, in thought, and in tastes. In every country customs exist which require to be changed; and to this rule the United States of America do not offer an exception.

The conventional proprieties differ in all countries; and those of France and America are diametrically opposite in all that pertains to the outward behaviour of young ladies. That fact explains to a certain extent some parts of the subjoined libel upon American women.

“In a great many houses it is customary to receive boarders, who live with the family, take their meals with it, and join it as new members. They are generally young men studying at the universities, or employed in large commercial and industrial establishments. No difficulties arise from this arrangement, when the persons of whom the family consists are of a certain age; but, on the other hand, the scene changes when young men are admitted into families having young ladies among its members:—and the young men select such families. At every hour of the day the young man will be in contact with the beautiful and smiling *Miss*—he will have all the opportunities of being with her, which are accorded on the other side of the ocean to friends of the family—he will sit beside her at breakfast—he will offer her his arm for the afternoon promenade—or he will take her to drive in the neighbouring park. The two will spend together the long evening hours in intimacy without hindrance, seated alone at the bottom of the garden, or shoulder to shoulder and head to head at the window of the unlighted ‘parlour.’ Next day, the two will go together to theatre, ball, or wood, and everywhere; the young man may see the young lady alone, and may walk out with her alone—it is his right. The beautiful girl wishes to show how she ought to appreciate, to feel for, or to love the man whom she may perhaps take as a husband, provided he be rich enough to provide her with a luxurious toilet, or simpleton enough not to be surprised to see her wearing French dresses

and jewellery for which he has not paid. To be able to regulate her conduct, she must know all that. And thus you see the 'flirtation' has its *raison d'être*. Matters, however, may assume a more decided character; the being constantly together may lead to contacts; but I do not mean to say that the American woman easily surrenders herself; on the contrary, her yielding is generally the result of calculation and self-interest, she knowing well what she is about, and rarely does she wholly give herself up, but will grant *les premiers de l'amour, ou même le simulateur de l'acte*. As this is a very delicate question, I shall sum up by saying that onanism and other amorous frauds are very common."

Dr Guichet gives a rapid sketch of many of the medical institutions, describes the state of medical education, and tells us by what studies and examinations the various medical qualifications to practise are obtained in the United States. To those who have not access to ampler sources of information the pages occupied with these subjects are likely to prove interesting. So far as we can judge, the author has derived his materials from reliable sources.

We congratulate the modern admirers of manly unblushing women upon the information contained in the following account of the "Medical College for Women," at Pennsylvania:—

"A little way out of the town stands the newly erected 'Medical College for Women.' It consists of two beautiful buildings, one of which is already in use as an hospital, and the other is to be opened this year for the teaching purposes of the Faculty. The institution is exceedingly well organized and very convenient: the amphitheatres are commodious to perfection, and from every seat the female student [*étudiante*] can follow the demonstrations. In the rooms for practical chemistry, each student has her appointed place. Adjoining the lecture rooms are the private rooms of the professors, where the students are individually questioned and examined with a view to give them practice in speaking and answering questions in public without embarrassment. At the top of the building there is a pretty dissecting-room provided with all modern appliances; in connection with it are special lifts for taking the bodies up and down. Let me here mention a fact in proof of the excellent digestion of American medical ladies and its superiority over that of us poor French male doctors, so far as professional physical aptitude is concerned:—I refer to the installation of a 'lunch-room,' communicating with the dissecting-room, so placed that when the student feels peckish, she may take her 'lunch' between whiles—say in the interval between dissecting a thigh and scraping a femur. We medical men, it must be admitted, have not hitherto even imagined a similar ardour—a similar passion, I was going to have said. But when women are determined, what won't they do?"

To shape the question so as to bear with precision on the matter mooted by Dr Guichet:—What have women been seen

to do when under the influence of the modern medical mania, and when in eager pursuit of medical knowledge? They have been seen—as a rule, with few exceptions—to exchange womanly instincts for pseudo-manly manners and revolting effrontery. The ladies of the Pennsylvanian College who are taught to speak on medical subjects in public without embarrassment, and to commingle luncheon with the dissection of dead bodies, are certainly most unpleasant subjects of contemplation; but their unfeminine manifestations do not represent the worst outcome of the medicalization of young ladies which some well-meaning social reformers are anxious to popularize in Great Britain, but as yet, happily, with only partial success.

An English physician, when lately visiting various Parisian medical institutions, particularly observed, on different occasions, the appearance and demeanour of several female medical students whom he met at dissecting-rooms, lecture-rooms, and hospitals. Three things particularly struck him in respect to these persons:—first, that none were French; second, that all were respectable-looking women and diligent workers; and third, that none were embarrassed by anything they saw or heard. Upon one occasion professor Richet performed an operation on the male organs of generation before a large clinical class at the Hôtel-Dieu. On the front bench, exactly in front of the naked man, sat an *étudiante* with eager unabashed gaze. On another day, at a lecture on the female organs of generation by Professor Pajot, illustrated in his usual style by histories which provoked constant shouts of laughter from five hundred listening young men, were present two *étudiantes*, who kept their countenances and diligently used their pens. Such spectacles of immodesty are revolting; they pollute the schools of medicine. If women are to study medicine—for the efficient practice of which few of them are physically and physiologically fitted—let them do so in separate schools of their own, but not in classes with male students. Great medical schools must not be allowed to become schools of indecency; and it is the *ne plus ultra* of indecency to teach medicine to male and female students in the same classes. Dr Guichet, we must say, reports a state of things in respect to the medical education of women as existing in the United States, far less unseemly than that which is tolerated in Paris, to the disgust, we believe, of the majority of its Medical Faculty. As a means of suppressing the trade of the mischievous women who in France, particularly in Paris, treat the diseases of women—and do largely in another business thereto relating—in virtue of midwifery licenses, some French physicians are of opinion that completely educated and fully diplomated female doctors of medicine are required. This view may be correct; but does it necessitate the scandal of young men and young women being taught the profession together in the same classes?

Dr Guichet sometimes airs his own peculiar English. For example, at p. 16, he tells us that he was shown over the Bellevue Hospital by one of the *internes*, gentlemen there called "*surgeon's house*." At the entrance to the Exhibition, he says "*heureusement des money's Banks sont installés*." At p. 152 we read:—"Times is money: donc, ne perdons pas de temps, et courons vite a Pennsylvania Hospital;" and again at p. 154, "*Times is money, disais-je au commencement*." The author's style is lively, light, and easy, such as we meet with in the best *feuilletons* of the Paris daily newspapers. The book is therefore very readable; but, considering the limited opportunities of observation which the author possessed, his startling conclusions regarding the pervading impurity of American society cannot be accepted. He has very probably been misled by smart guide-interpreters picked up at his hotels. In New York, as in Paris and elsewhere, these hungry functionaries delight in cramming foreign clients with acceptable exaggerations.

Etude sur le Spina Ventosa accompagnée d'Observations Recueillies à l'Hôpital Sainte-Eugénie et à l'Hôpital des Enfants Assistés.
PAR EDOUARD GOETZ. Pp. 118. Paris: 1877.

THIS is a well-arranged, well-written, and instructive essay, illustrated by thirty-six original cases. The author gives a bibliography of the subject, which, though useful, is far from being complete.

His conclusions are to the following effect:—

"1. The term *spina ventosa* ought to be used only as the name of one disease—that which I have described as occurring in the long bones of the foot and hand in scrofulous children.

"2. The anatomical lesion of *spina ventosa*, thus defined, is a chronic osteomyelitis; the change in the medullary tissue is primitive (fungous degeneration); that in the bone is secondary; and the alteration in the periosteum (chronic periostitis) is a consequence of the two preceding alterations.

"3. *Spina ventosa* is an affection purely of the body of the bone, there being very seldom any lesion of the epiphyses or articulating surfaces.

"4. Scrofula in all its degrees is, so to speak, the one cause of *spina ventosa*. The immediate causes of the malady are obscure.

"5. There are two periods in the progress of *spina ventosa*: first, indolent ulceration without any alteration of the skin; second, ulceration of the skin followed by the issue of a fungous substance from the medullary canal.

"6. The diagnosis of *spina ventosa* has to be made between it and chilblains, dactylion (strumous or syphilitic) enchondroma of

the fingers, exostoses, caries and white swelling of the metacarpal and phalangeal articulations.

"7. Cure is the most frequent termination of *spina ventosa*. Sometimes, however, the affected bone becomes necrosed, and then the morbid changes extend to neighbouring parts.

"8. In every case medical treatment ought to be tried, and continued for a long time. Removal of the fingers ought only to be proposed as a last resource, and after a conservative attempt has been made by sub-periosteal resection of the diseased bone."

Infant Feeding and its Influence on Life, or the Causes and Prevention of Infant Mortality. By C. H. F. ROUTH, M.D., M.R.C.P.L. 3d Edition. London: J. & A. Churchill: 1876.

AFTER the lapse of thirteen years a new edition of Dr Routh's interesting and valuable work is presented. The necessity for the views therein advanced being widely spread is evidenced by the statement, that since the second edition was published in 1863, 146,000 children in England have died of developmental diseases, and 12,000 from the want of breast milk, and that these numbers are still on the increase. In 1847, the proportional deaths to one million of persons living from these causes was respectively 653 and 46; but, according to the author, the death-rate is now greater, being 695 and 63.

The careful consideration of the various questions reviewed by Dr Routh requires no additional recommendation. To the student, and especially to the young practitioner, the information the volume contains is most useful. It is only through the profession diffusing the correct views of infant nourishment advocated, that those most interested can be reached. One difficulty, however, exists, and it is a great one, that the class amongst whose children the chief infantile mortality occurs from the causes considered in this volume are not readily benefited, as very frequently the infants are not submitted to medical supervision until too late. The figures quoted above, on Dr Routh's own statement, show this. They point to the necessity for our dispensaries and children's hospitals disseminating more extensively correct ideas as to infant feeding amongst the class of mothers seeking their aid. It would be well were all of these institutions to distribute printed directions in clear language, and shortly expressed, for the best means to feed infants when the mother is unable to nourish her own offspring. Dr Routh might with ease have appended a form to the present edition of his book, and so have made the result of his investigations more generally useful and practical. His appendix is rather suited for the guidance of medical advisers than for their patients.

Of the new edition it may be sufficient to state, that it is consider-

ably larger than the last by nearly eighty pages. This is due to an enlarged consideration of the substitutes for milk, and embraces a reference to most of those, and also to the addition of an index, which renders the information in the volume more readily available. Glancing over this, under the head of Galactagogues, we note that Dr Routh has made no addition to those enumerated in his last edition. The medical journals, however, have made note of others, to which reference ought to have been made to render the work complete in all departments, and especially in this, the list of reliable galactagogues being by no means extensive.

The revision of the text has not been very carefully performed, for in his allusion to the two kinds of the Bofarcira the confusion of the red and the white is repeated. Before another edition is submitted for review the author may perhaps find time for more careful revisal. It is matter for regret that a standard work has any important omission or defect.

Hints to Mothers for the Management of Health during the period of Pregnancy and in the Lying-in Room; with an Exposure of Popular Errors in connexion with those Subjects, and Hints upon Nursing. By THOMAS BULL, M.D. New Edition, thoroughly Revised by ROBERT W. PARKER, M.R.C.S.Eng. London: Longmans, Green, & Co.: 1877.

The Maternal Management of Children in Health and Disease. By same Author, Editor, and Publishers.

THE new and revised editions of these works have been submitted to us, and although they are intended for popular rather than professional readers, we give them a passing notice. Dr Bull's two volumes are not only well known, but are highly appreciated by those for whom they were written.

His "Hints" are now in their 25th edition, whilst the other, on "The Maternal Management of Children," is in its 14th—sufficient testimony this to the estimation in which they are held as family guide-books.

Mr Parker has done the reviser's part with care and judiciousness, and has brought up the new editions to the present advanced state of medical science. They may be recommended by medical men to their female patients as trustworthy manuals for the management of their own and their children's health, in their absence. Seeing that both volumes find a large number of readers amongst the emigrant class, a fuller text upon some subjects might have been desirable. The intention of the author of the works evidently was not to supersede the medical attendant, but rather to aid him by affording sufficient information for the direction of the case until his arrival.

A Practical Treatise on the Diseases of Children. By J. FORSYTH MEIGS, M.D., and WILLIAM PEPPER, A.M. and M.D. Sixth Edition. London: Henry King Lewis: 1877.

THE fact that only three years are passed since the last edition of this work appeared is strong evidence of the estimation in which Drs Meigs and Pepper's treatise is held in America. In the fifth edition of 1874, several important articles were rewritten, whilst those on Pulmonary Emphysema, Pneumothorax, Affections of the Tonsils, Retropharyngeal Abscess, Malarial Fevers, and Scrofula, were added. In a work on Diseases of Children, containing about 1000 pages, it was scarcely to be expected that there would be either room or necessity for further additions. Nevertheless, in the new, the sixth edition, the editors have not only devoted attention to the revision of the text, but have added articles upon Night Terrors and Epidemic Cerebro-spinal Meningitis, as well as rewriting other portions. After so thorough revision, it is to be expected that the work is perfect. The new articles give a fair resumé of the pathology, symptoms, and treatment of the diseases alluded to.

This joint work of Drs Meigs and Pepper merits high praise. It has been carefully revised and advanced to the present time, and must be regarded as the most complete work on the diseases of children in our language. We note, nevertheless, one omission. The morbid conditions of the umbilicus are alluded to as a presumed cause of tetanus nascentium; but what these are the authors do not mention. Hæmorrhage from the umbilicus we find no allusion to, whilst the inflammation of the vein and its effects upon the liver is not described. Comprehensive as the work is, it is possible, therefore, to detect some omissions. This is the more remarkable, for if there be any objections to the treatise, it might be alleged it is too voluminous. The contained matter is, however, of excellent quality, and although the volume is too large to be a favourite student's manual, it should find a place in the practitioner's library.

Disease of the Brain in its Relation to Inflammations of the Ear.

By J. ORNE GREENE, M.D., Aural Surgeon, Boston City Hospital; Clinical Instructor of Otology in Harvard University.

IN this pamphlet of about thirty pages, reprinted from the *Medical and Surgical Reports of the Boston City Hospital*, second series, 1877, we have an excellent compilation of what has been written regarding the spread of disease of the ear to the brain, its coverings, sinuses, etc., and the diseases which arise therefrom. We have here clearly pointed out the intimate connexion there exists between the ear, the brain, and many other highly-important parts. By

means of the microscope and fine injections, it has been shown that the numerous small foramina with which the temporal bone is perforated furnish passages through which an inflammation may extend to other parts; also, by following the course of the larger bloodvessels and nerves. The spread of purulent inflammation of the soft parts of the ear-cavities—a periostitis of the interior of the petrous bone—does not necessarily take place through the existence of a caries of the petrous bone, but, as Von Trœltzsch has written, “Not only the true diplœe, but the bone of the os temporis in general, is in direct connexion, by means of its bloodvessels, with the dura mater on the one hand, and with the soft parts of the ear on the other. The temporal bone, in general, receives its bloodvessels from within and from without, and also sends them in both directions, not only to the dura mater, but also to the membranes lining the outer and middle ear. Diseases of the latter produce abnormal conditions in the bone and its vessels, which, either through the contents or along the tissue of the walls of the bloodvessels, pass on to the dura mater, and there cause secondary pathological processes. These announce themselves in the one case by purulent inflammations of the brain membranes, or of the walls of the sinuses; in another, by clot formation and closure of the calibre of the vessels, or by the entrance of putrid matter into the circulation. That all of these processes, developing themselves within or on the vessels, can be produced by the purulent inflammation of the soft parts of the ear without the existence of a caries of the petrous bone, cannot often enough be impressed upon the practitioner, since many are inclined to fear only a caries of the petrous bone; not, however, a simple otorrhœa, or purulent inflammation of the soft parts of the ear.” Dr Orne Greene distinctly points out the intimate connexion there is between the ear through the temporal bone and many important structures, such as the lateral sinus, with the posterior temporal vein of the diplœe of the skull entering it, and a vein passing through the mastoid foramen from the scalp into the lateral sinus, also the facial nerve in the Fallopiian canal, the jugular vein, the carotid artery, the meatus auditorius internus, etc. Besides telling us how, and in what form, disease spreads from the ear to the brain, we are directed to an article by Moos in the *Archives of Ophthalmology and Otology*, vol. iii., No. 2, p. 177, where he has demonstrated by post-mortem examination that the purulent inflammation of the meninges in cerebro-spinal meningitis has spread along the auditory nerve in the meatus auditorius internus and set up an inflammation of the labyrinth of the ear, or the inflammation may extend to the tympanum itself. The pamphlet is the result of much laborious research, and does credit to the advanced state of otological science in America. We heartily commend its perusal to all medical practitioners.

The Function of the Uvula, and the Prominence formed by the Azygos Uvula Muscles. By THOMAS F. RUMBOLD, M.D., St Louis, Mo.
Reprinted from the *St Louis Medical and Surgical Journal*,
December 1876.

SINCE the spring of 1870, when he saw "a patient whose right nostril was of sufficient calibre to admit my little finger in its whole length," Dr Rumbold has taken every opportunity, along with the above favourable one, to ascertain the action of the uvula, and to inspect its motions during mastication, deglutition, and vocalization. During mastication, the whole free border of the soft palate rested on the base of the tongue, reaching within a short distance of the epiglottis. The velum appeared to lie between the tongue and palate. During the act of deglutition, the soft palate was pushed backwards by the alimentary bolus until the posterior wall of the pharynx was reached; the motion was continued in an upward direction until the upper surface of the velum was high enough to cover and close both the Eustachian tubes. During vocalization (*a*), the velum was either elevated and pressed against the posterior wall of the pharynx during the phonation of sounds that passed through the mouth alone; or (*b*) removed from this wall a small distance, but not so far as to prevent the azygos prominence from touching it, for sounds that pass mostly through the mouth and a little through the pharyngo-nasal cavity; or (*c*) lowered to allow the uvula and a small part of the central portion of the velum to rest on the base of the tongue for sounds that passed mostly through the nose and a little through the mouth; or (*d*) still lower, so that its whole free border rested on the base of the tongue for the formation of sounds that passed the nose alone. A patient who has just undergone an operation for excision of an elongated and hypertrophied uvula may talk immediately, in an ordinary tone, with a greater ease than before the operation; but just as soon as he utters words with more than the usual force of voice, so will he be compelled to cut his sentence short. The normal uvula makes the soft palate a non-vibratory valve. In removing part of an enlarged uvula, we ought to leave as nearly normal an uvula as possible. Figures are given of all the different positions of the velum and uvula in the movements and actions described.

A Case of Exostosis of the External Auditory Meatus Drilled out by the "Dental Engine." By ARTHUR MATHEWSON, M.D., Brooklyn, N.Y. New York: D. Appleton & Company, 549 and 551 Broadway: 1877.

DR MATHEWSON, in removing the exostosis of the external auditory meatus, used what is known as Elliot's suspension dental engine,

which is well figured, as also the different drills necessary to enlarge into one the openings made. After experimenting with the instruments, and getting some appreciation of their power and the proper degree of pressure in applying them, with the assistance of his friend, Dr William Jarvie, dental surgeon, to place and adjust (as well as to work the treadle of the engine, at which he was an adept), Dr Mathewson was prepared to complete the entire operation for the removal of the exostosis at once. The patient was under the influence of ether. The parts to be operated upon were well illuminated by the operator using the frontal mirror. The first step was to remove the integument covering the exostosis, which was accomplished by another dental instrument known as the scaler, "the skin being circumscribed and scraped off with it." "The bony growth was then perforated at several points near its centre with the smallest of the drills, about one and a half mm. in diameter, which penetrated without difficulty with so slight a pressure that there was but little danger of its slipping forward and injuring the deeper parts, though the growth was eburnated and excessively hard." After enlarging the opening by means of the larger drills, running the perforations together and using a little lateral pressure to reach out the meatus, an opening fully three mm. in diameter was left, whereby a probe could be freely passed the whole length of the external auditory meatus. Much bleeding took place during the operation, which was difficult to control, notwithstanding frequent syringing and the use of styptic cotton to swab out the parts operated upon. Should not the soft integuments have been destroyed by cauterization shortly before the operation? Soft granulations sprang up, lasting for weeks, but were overcome by using nitrate of silver. Ultimately an opening nearly as large as the meatus was left. The posterior lower part of the membrana tympani can be seen, and "the hearing has risen to nearly the normal standard," from the watch not being heard "at all on the affected side;" whilst the serious symptoms, such as a sense of pressure in the head, attacks of loss of consciousness, and other cerebral symptoms, are entirely gone. Dr Mathewson concludes his history of the case with a brief résumé of the history of the therapeutics of exostosis of the external auditory meatus, and from it we quite agree with Dr Mathewson that the operation inaugurated and successfully carried out by himself is a step in the right direction. "Other uses for the dental engine in surgery readily suggest themselves." So our author says, and we cordially commend the perusal of his pamphlet, reprinted from the Transactions of the International Otological Congress, 1876, to those who wish to carry to a successful termination by all due care on the part of the operator any operation with the dental engine.

On Deaf-Muteism, and the Method of Educating the Deaf and Dumb.

By LAURENCE TURNBULL, M.D., Physician to the Department of the Eye and Ear of Howard Hospital, Philadelphia. Extracted from the Transactions of the Medical Society of the State of Philadelphia. 1875.

DR TURNBULL is a strong advocate for what is known as the "German system" of educating the deaf-mute. The German system, or "artificial method," developed by Heinicke 1760, was to cultivate what remained of speech "by developing all its power, which exists in all (save a very few)." "There ought to be a commissioner in every State to examine and classify the deaf and dumb, where all who are found to possess any degree of hearing or any remnant of speech (having lost hearing after learning to talk), or any who manifest a marked facility in vocal utterances, should be assigned to the articulating schools, while all others should be placed in the older establishments, where the language of signs" (*i.e. French system*) "is made the basis of instruction." The German system is now made use of in educating the deaf-mute in two schools in London. In Edinburgh, although it was the method used by the Braidwoods, it is not now in use—chiefly, we believe, owing to the longer time required to educate by this system the deaf-mute. There exists also in London a school where the pupils are taught by Mr Bell's method of visible speech, where the education of the deaf-mute has been attended with marked success. A young lady who lost her hearing entirely at the age of eight years, and has been educated by the "visible-speech method," has composed a poem on visible speech worthy of insertion in Dr Turnbull's brochure. As it is now some years since Dr Turnbull's pamphlet first made its appearance, we hope his object has been to some extent attained, viz., to endeavour to prevent the occurrence of deaf-muteism by the timely aid of the physician, and in inducing a certain amount of attention to the deaf and dumb and their education.

Hawarden, 1877. ALFRED HAYS, London.

THIS, though hardly a medical, at least, not a pathological, photograph, is interesting. It represents the great political feller of trees, axe in hand and chips at feet. It may serve as an illustration of the vigorous old age of the neuro-sanguineous type.

part Third.

PERISCOPE.

(Continued from p. 277.)

TREATMENT OF ANOMALIES IN THE SPANNING OF THE MEMBRANA TYMPANI. By Professor Dr JOS. GRUBER.

In my treatise in the last number,¹ I have, from anatomical and other researches, concluded that the normal spanning and vaulting of the human membrana tympani arise chiefly from conditions inherent in its own construction, and depend, to a very slight extent, to its natural attachments. From this fact we may, *a priori*, conclude that abnormalities in the spanning and vaulting of the drumhead depend upon pathological changes in the drumhead itself, without any change in those structures which are directly or indirectly connected with it. This must be established as an important fact. Indeed, we are so far justified in assuming that such changes in the structure of the drumhead which can give rise to irregularities in the spanning, bring secondarily the other parts of the conducting apparatus of the organ of hearing into sympathy, —a circumstance which, as yet, notwithstanding its vast importance, has not been taken into that consideration which it deserves. If I diligently search through the literature, as far as I am able, concerning the abnormal position and pathological changes of the drumhead, so I find they have placed its influence to destroy the hearing, etc., almost exclusively on account of its peculiar disturbance of function, and the chief detriment on the neighbouring structures, leaving almost entirely out of consideration the chain of bones of the ear. They have likewise always endeavoured to explain the imperfect FUNCTION by increased thickenings in the membranes by the so-called opacities, as if they held the thicker drumhead as more suited to reflect the sound-waves falling upon it than to conduct them further, without becoming aware of the fact that the disturbed function is also to be accounted for by the thickenings in the membrane at the same time causing excessive stretching of the drumhead. But however much this leaving out of sight of these secondary anomalies in the spanning of the drumhead has wronged our therapeutics, we see only now, when we observe that, in such excessive thickenings, operations which tend to relieve the abnormal stretching of the drumhead are often followed by the best results.

It is certainly superfluous for my readers to pursue this subject further, through what changes in the membrane itself excessive spanning can be brought about, or what conditions specially give

¹ *Monatschrift für Ohrenheilkunde*, June 1877, Berlin.

rise to relaxation of the drumhead. I have on several occasions fully entered into these conditions, and can simply point them out at present.¹ One only, and that because it appears to me of very special importance in relation to my clinical experience, will I relate with special emphasis.

Whilst increased spanning of the drumhead chiefly arises from morbid processes in the membrana tympani itself, or in neighbouring structures, the now so frequently occurring relaxations are undoubtedly the results of treatment for a disease of the ear, and, what is still worse, well-established aurists give the foolish public this method of treatment into their hands to produce such relaxations of the drumhead. Without further consideration, the laity are constantly given the air-douche into their hands, and ordered to drive air into the middle ear, whilst swallowing in all cases of supposed disease of the ear. One of our most precious means of cure, the application of the air-douche, which, under proper indications, and properly applied, is crowned with the best results, becomes, in this manner, mischievous; and when I reckon the number of cases of relaxation of the drumhead which now come under our notice, and compare them with those rarely-met-with cases in former years, I am again compelled to declare aloud at all times and in all places boldly against it. If we encourage it further, it will soon come to pass that both doctors and patients will discard it. The Politzer's method is now only in a few special cases required, and who does not take note of this will have many a sad experience.

After this short digression, I will now return to speak shortly of the proper theme of this paper, *i.e.* the treatment of anomalies in the spanning of the drumhead, in order that we may collect together several important facts bearing on the subject.

I will now speak of the treatment of these diseases in so far as it must be practised on the membrana tympani itself, and will, to render them more easily understood, divide the anomalies of spanning in the membrane into (*a*) excessive stretching of the whole membrane (total stretching); (*b*) excessive stretching of separate parts of the drumhead (partial stretching); then in (*c*) excessive slackness (relaxation) of the whole membrane; (*d*) parts of the membrane too relaxed; and in (*e*) a combination of these conditions, where separate parts of the same drumhead are too much stretched, others relaxed.

Each of these conditions demands a separate treatment for the drumhead itself without regard to that treatment, which still other

¹ See my treatises, "Concerning Anomalies in the Spanning of the Drum-head" (*Monatschrift für Ohrenheilkunde*, Jahrgang, v., 1871, No. 3, w. ff.); further, "The Frequent Puncturings of the Drumhead as a Means of Cure, of Primary or with Thickening coming on; Excessive Spannings of the Drum-head" (*Allg. Wiener Med. Zeitung*, 1873); further, "Concerning a Rare, and until now Undescribed, Anomaly in the Drumhead" (*Monatschrift für Ohrenheilkunde*, etc., No. 12, 1876).

possibly present changes in the organ of hearing would require, and of which we have not to enter into any further here.

It is perhaps a matter of course that we, in these anomalies of spanning which are conditioned by changes of structure in the membrane itself, can and shall practise all those methods of treatment from which we reasonably are justified to look for something. Thus we will, for instance, where excessive stretching of the membrane exists, if nothing to prevent us is seen, and the Eustachian tubes are permeable to air, certainly make use of the methodical application of the air-douche before all others, and assuredly in many cases we will find great benefit. Only we must proceed with the greatest foresight, because it very readily happens that separate somewhat more yielding portions of the drumhead, through the application of the air-douche, will be too much distended, and without benefit to the patient, whilst the truly stretched portions will not be distended at all through the application of the air-douche. From all these methods of treatment we will turn away, and will only speak of those operations which come under our notice in the treatment of the drumhead itself.

In relation to this, the question next arises, When can we operate in cases of anomalies in the spanning of the drumhead with regard to the result, and what operations are then indicated?

It would be easiest to say we should operate on the membrana tympani, if we are convinced of anomalies in the spanning of the membrana tympani by ocular and more extended means of examination. Such a doctrine is, on that account, not satisfactory, because the diagnosis of lower degrees of changes in the spanning, especially excessive spannings, is not so easily made out; and because further changes in the spanning in the drumhead are occasionally compensated by secondary changes in other structures of the auditory apparatus, we would then operate even without need for an operation in that case.

In more recent times I have promulgated a method of examination, with the assistance of those with whom we are in a position to determine with certainty whether we have diagnosed correctly if anomaly in the spanning of the drumhead be the cause of the disturbance to the hearing or not. It is this method which I have given in the *Allg. Wiener Med. Zeitung* (No. 7, 1877), and extracts of a comprehensive nature in this *Monatschrift* (No. 3, 1877), and I have only now to add that I have, up to this time, operated with the best results for improvement in the hearing in all cases, if the result of my examination with the tuning-fork pointed to an operation. The following facts to be stated in this work will throw light upon what has been already said. If the sounding tuning-fork, held before the external auditory meatus during the successful application of the valsalvian method of inflating the tympanum, is heard louder than before and after the Valsalvian method; if then the sounding tuning-fork, placed upon the vertex during the val-

salvian method, is heard less in the same ear as before and after the Valsalvian method, I observe in this result of my examination the indication for an operation for the already made out relaxed condition of the drumhead by the examination with the hand-mirror and speculum; and if the sounding tuning-fork before the external auditory meatus is heard at the same pitch during the Valsalvian method as before and after it, and it is also the same if the sounding tuning-fork is placed on the vertex, I observe therein an indication for an operation to better the hearing in the case of excessive stretching of the drumhead.

I further see an indication for operative interference to the same purpose, should the result of my examination give no more enlightenment in the case, if on one and the same drumhead partial stretching is combined with relaxation of another part, as such combinations actually come under our observation. In such cases it can readily happen that the application of the Valsalvian method causes, on the different parts of the drumhead, quite different results, and thereby the perception of the patient is not to be trusted entirely. The further objective examination, combined with the experience we gather in our clinical research, can then help us to determine if we should go on to an operation which we will dare to undertake so much the more pleasantly as all the operations which come to our help must be considered trifling when compared with the good result we are striving for.

Besides, every aural surgeon of experience knows that the object of our treatment in such cases is not the improving of the hearing alone; other subjective symptoms than impairment of hearing force us to operative interference, and in so far will we resolve in the one or the other case to an operation, even if my already expounded method of examination has given a negative result with regard to the hearing. I have to-day in my clinic, in presence of my hearers, performed the operation on a patient who suffered from fulness in the head and noises in the ears, which arose from the relaxed posterior superior quadrant of the membrana tympani being pressed upon the union of the incus and stapes, notwithstanding that the previously mentioned examination as a test for the hearing had a negative result.

(To be continued.)

TO SEE OURSELVES AS OTHERS SEE US.—In talking with one or two graduates and teachers of the Edinburgh University, I have learned of the existence there of an interesting regulation affecting the position of instructors, in the medical department at least, which obtains, so far as I know, scarcely anywhere else. It appears that, besides the regularly appointed corps of teachers, any person, after proving himself to be properly qualified before a certain examining-board, may open rooms and hold courses of lectures on any subject, attracting from the regular lecturers as

many students, with their fees, as like to come to him, and his instruction must be accepted by the diploma-giving body as the equivalent of that provided at the established courses.

According to one of my informers, this regulation was pressed upon the university a number of years ago by the city government, rather against the will of the Faculty, but is now almost universally admitted to be a source of vigour and progressiveness. Under the impersonal, and therefore merciless, judgment of the students, inefficient teachers gradually give place to better men, and strong workers, who feel that their merit is greater than their reputation, are attracted into the field.

This arrangement is not, at the same time, found to be so unfair towards the regularly appointed instructors as would at first appear. All the advantage which is given by prestige is on their side, and, further, though they lose their fees on the defection of their students, they continue to receive their salaries.

In the London schools, it often happens that the rising lecturers are forced, for some years, to teach subjects in which they are not especially interested, passing from one to another; whereas, in Edinburgh, an able man has the whole field open to him at once. Thus, a rising surgeon of Edinburgh said to me that, some years ago, he had been offered a position in one of the London hospital schools, but on learning that he would have to teach at first some branch, I forget which, from which his predecessors had passed on to something more to their taste, he declined the offer, saying that he had already been teaching anatomy for several years, and was about to take up surgery in the next.—*London Letter, from the Boston Medical and Surgical Journal* for 27th September 1877.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By W. HANDSEL GRIFFITHS, Ph.D., L.R.C.P. Ed., Licentiate of the Royal College of Surgeons of Edinburgh; Lecturer on Medical Chemistry in the Ledwith School of Medicine, Dublin; Corresponding Member of the Therapeutical Society of Paris, and of the Pharmaceutical Society of St Petersburg; Honorary Member of the Ontario and Chicago Colleges of Pharmacy, etc.; Librarian to the Royal College of Surgeons in Ireland.

[The author of these Reports will be glad to receive any books, pamphlets, or papers relating to Materia Medica or Therapeutics. They may be forwarded through the agencies of the *Edinburgh Medical Journal*.]

ERGOTINE IN THE TREATMENT OF PURPURA HÆMORRHAGICA.—In the *American Journal of Medical Science*, April 1876, Dr E. W. King of Galena relates a case of purpura hemorrhagica which was successfully treated by hypodermic injections of ergotine.

The great value of ergot in the treatment of purpura was first announced by Henock, and his observation was shortly afterwards

confirmed by Bauer. In the *Practitioner* for November 1876, Dr Duncan Bulkley has a valuable paper, in which he records three cases of purpura successfully treated with ergot; in one of these cases the ergot was given hypodermically, in the others by the mouth. Ergot acts in this disease by causing contraction of the dilated vessels, and also probably by causing a contraction of the vasa-nervorum, the bloodvessels of the nerves thus restoring a normal nerve-control to the capillaries of the cutis. Dr Bulkley prefers for hypodermic medication the fluid extract of ergot undiluted; he states that, if care be exercised, local accidents, as abscess or inflammation, will not follow. He prefers the pectoral muscles or sides of the chest as sites for injection. Some cases of purpura require the frequent repetition even of very large doses of ergot: from 10 to 15 minims of the fluid extract hypodermically once or twice a day will generally be sufficient, but this dose may be increased to 20 or 30 minims, and repeated if necessary every hour and a half.

ERGOT IN THE TREATMENT OF ENTERIC FEVER. — M. Hayem gives ergot in cases of enteric fever with the object of lowering the temperature; its use seems to be preferable to that of sulphate of quinine or digitalis. Under the influence of ergot there is a much more rapid defervescence; and at the period of the acme, instead of there being a rise in the temperature chart, a plateau is obtained. The dose varied from 30 to 50 grains in the twenty-four hours.—Quoted in the *American Journal of Medical Science*, April 1876.

ERGOT AS A PREVENTIVE OF AFTER-PAINS.—In the *Annales de Gynécologie*, Sept. 1876, Dr Le Diberder makes some observations on the employment of ergot as a preventive of after-pains. He gives half a drachm in divided doses directly after the expulsion of the placenta, with the object of producing a firm and persistent contraction of the uterus.

ERGOTINE HYPODERMICALLY IN ATONY OF THE BLADDER.—In the *Medical Times and Gazette* for April 7th is a summary of Professor von Langenbeck's paper, read at a meeting of the Berlin Medical Society, on the treatment of atony of the bladder with hypodermic injections of ergotine. In all his cases there was an immediate increase in the contractile power of the bladder. One case was that of a gentleman, aged sixty-two; four injections of 0·12 grammes of Bonjean's solution of extract of secale cornutum completed the cure.

ERGOT IN URETHRAL HÆMORRHAGE.—Dr Geo. H. Boyland draws attention to the great efficacy of ergot in urethral hæmorrhage, and relates a case in which the fluid extract given in doses of 15 drops every two hours rapidly effected a cure.—*American Journal of Medical Science*, July.

ERGOTINE IN THE TREATMENT OF LEUCÆMIA.—Dr R. Crockett publishes an interesting case of leucæmia with considerable hypertrophy of the spleen, muffled, weak, and rapid heart-beats, rapid and quiet respiration, and albuminuria. Dr Crockett had recourse to perchloride of iron and ergotine. Perchloride of iron was given in doses of twenty drops daily in sugared water. The ergotine was administered hypodermically—four grains of ergotine being given dissolved in fifteen minims of distilled water and glycerine. Two injections were made on alternate days. The hypertrophy of the spleen diminished after the third injection and the condition of the patient was greatly improved.—Quoted in *British Medical Journal*, December 16, 1876, from *American Journal of Medical Science*.

ERGOT HYPODERMICALLY IN ENLARGEMENT OF THE SPLEEN.—Dr J. J. Jones, jun., publishes a case of successful treatment of enlarged spleen by hypodermic injections of ergot after failure with all other remedies. He states that one morning he injected eight drops of Squibb's fluid extract of ergot under the skin over the left lumbar region, and to his complete surprise he found the spleen next morning to have diminished at least six inches in circumference. He used the ergot in the same manner five times in successive days, with one or two intermissions. He considers the patient almost well, and attributes the recovery entirely to the ergot.

THE ACTIVE PRINCIPLE OF ERGOT.—Dragendorff and Podwissotzky claim to have found the active principle of ergot in a weak acid called sclerotic or sclerotinic acid, which exists to the extent of 4 or $4\frac{1}{2}$ per cent. in good ergot. Of this acid 1-16th to 1-12th of a grain may be injected subcutaneously. It is odourless, tasteless, and soluble in water.—*Medical Examiner*, August 30th.

FORMULA FOR THE PREPARATION OF ERGOT FOR HYPODERMIC MEDICATION.—At a recent meeting of the American Pharmaceutical Association, Mr D. Benjamin states that the following formula for the preparation of ergot for hypodermic use has been employed advantageously by Professors Agnew, Goodall and others. Two troy ounces of powdered ergot are exhausted by eight fluid ounces of strong alcohol; the tincture is evaporated at a low temperature to two fluid ounces; when cold, mixed with six fluid ounces of water filtered; again carefully evaporated to two fluid ounces, and preserved by the addition of three grains of salicylic acid.

FORMULA FOR ERGOTINE.—The following is the formula for ergotine recommended by Mr Charles Mitchell:—R Ergot, in fine powder, ʒviij. ; acetic acid, fʒij. ; alcohol, fʒiv. Moisten the ergot with a mixture of the acid and fʒviij. of water. Let it stand

for twenty-four hours, pack in a percolator, and exhaust with water; evaporate to four fluid ounces; add the alcohol; let it stand several hours; filter, and evaporate to an extract. Result, about 480 grains. One grain is equal to eight grains of ergot.—*Richmond and Louisville Medical Journal*, Dec. 1876.

PHYSIOLOGICAL ACTION OF QUININE.—According to N. Jerusalemsky, quinine given in small and medium doses (1 to 5 grains) always causes in dogs an increase in the frequency of the pulse. Just before death the pulse sinks rapidly. The blood-pressure in general has a tendency to fall after a brief period of increase; large doses (20 to 25 grains) cause the pressure to sink rapidly and diminish the pulse-frequency generally after a short acceleration. The acceleration of the pulse is the result of a depression or paralysis of the regulating and excitation of the excito-motor nervous system. The temporary increase of the blood-pressure with medium doses is due to paralysis of the regulating and stimulation of the vaso-motor apparatus. After the excitation of the vaso-motor centre, paralysis follows very rapidly, which affects the peripheral vessels, the excito-motor cardiac ganglia, and the cardiac muscles. After large doses the heart itself does not respond to direct stimulation. In man, Jerusalemsky, after a moderate dose (10 grains), observed acceleration of the pulse and increased heart-beat.

The respiration is always increased by small doses, slowed by large doses, and also rendered irregular with rapid-following asphyxia, owing to the effect of the drug on the respiratory centre. The hyperæmia and the hæmophysis following large doses of quinine are probably due to paralysis of the vaso-motor centre. The author found the action of quinine on the temperature to be inconstant; he assumes the existence of a heat exciting centre opposite the second dorsal vertebra, and a heat regulating centre between the sixth cervical and first dorsal vertebra, and he explains the modification in temperature by the relation of quinine to those two centres; thus, increase after large doses would be produced by paralysis of the regulating centre.

The rapidity of the blood-current is much slowed by quinine, owing to the paralysis of the vaso-motor centre. Jerusalemsky confirms the statements of Binz relative to the effect of quinine on the white blood-corpuscles; he also observed the cessation of the amœboid movements, and the emigration and diminution in the number of these bodies. He also observed that the corpuscles which had emigrated had for the most part a single nucleus, whilst previously the greater number were multi-nucleated. Like Manassein, he observed that the red blood-corpuscles became larger under the influence of quinine. Confirming Mosler, he observed a diminution in the size of the spleen, the organ becoming at the same time tougher, granulated on the surface, and of a brighter colour. This

depends primarily on the effect of the alkaloid on the peripheral, nervous, and muscular elements of the spleen; and, secondarily, on the splanchnic and central nervous system.—Abstract in *Centralblatt für die Med. Wiss.*, No. 26.

TOXIC EFFECTS OF QUININE.—M. Dumas records a case in which sulphate of quinia produced different forms of cutaneous eruptions and other singular effects, as asthma, coryza, fever, &c.—*Journal de Therapeutique*, No. 8, 1876.

Dr Denig, an American physician, also relates a case in which the administration of quinine was always followed by a scarlatini-form eruption attended with itching, fever, and general disturbance, all of which symptoms rapidly subsided upon the quinine being stopped.—*Journal de Med. et de Chir.*, June 1877.

THE ELIMINATION OF QUINIA.—Drs Albertoni and Ciotto have experimentally shown that the presence of quinine in the bile may be demonstrated in from 2 to 5 hours after its introduction into the stomach. In the stomach the absorption of quinine is favoured by the acids present, particularly by the hydrochloric acid; while in the intestine, on the contrary, this is rendered less easy by the alkalinity of the enteric and pancreatic secretions, and still less by the biliary acids which form insoluble combinations with quinine, though these last are soluble in excess of acid. Once entered by gastro-enteric absorption into the portal circulation, quinine finds a natural anatomico-physiological route for elimination in the biliary secretion. Quinine introduced by the alimentary passages appears to stop by preference in the liver and spleen. Messrs Albertoni and Ciotto find that, hypodermically injected, quinine is eliminated by the urine,—an important fact in practice, for it is thus useless to administer the remedy by this method if we expect to affect the liver and spleen. Quinine taken by the mouth is in part eliminated directly by the portal circulation without passing into the general venous system. As regards the length of time during which quinine remains in the organism, it has been found in the urine 68 hours after ingestion. Finally, quinine was always found by MM. Albertoni and Ciotto in the spleen, nearly always in the liver, viscera, in which it remains for the longest time. In the heart quinine is found in larger quantity when introduced hypodermically than when taken by the mouth. In the brain it appears very quickly, but in smaller quantity than in the other viscera mentioned.—*Bull. Gén. de Thérap.*, Nos. 8 and 9, 1876, quoted in *Dub. Med. J.*, April 1877.

QUININE IN THE TREATMENT OF FISSURES OF THE NIPPLES.—Dr Le Deberder, of the Lorient Hospital, during a long experience of the use of quinine in the treatment of fissures of the nipple, has always found that a cure was effected in from 3 to 5 days. He generally prescribed a dose of 6 grains early in the morning, and a similar dose about 11 o'clock A.M. Local treatment was considered of secondary importance, being confined chiefly to poultices

and some simple wash or salve.—*Med. Press and Circ.*, Dec. 27, 1876.

THE ADMINISTRATION OF QUININE IN COMBINATION WITH HYDROBROMIC ACID.—In the *Canada Medical Record* for June is a brief paper by Dr W. E. Forrest, in which he indorses the recommendation of Dr Fothergill to give quinine in combination with hydrobromic acid. The tinnitus aurium following the exhibition of quinine seems to be due to an active congestion of some parts, if not the whole, of the brain, as Dr D. St J. Roosa has observed that after the administration of 10 or 15 grains of the drug, the membrana tympani and malleus are markedly injected. It may be that hydrobromic acid, being analogous to bromide of potassium, may, like that salt, cause contraction of the bloodvessels, and thus prevent the bad effects of quinine. The following formula is recommended by Dr Forrest: \mathcal{R} quinia sulph. $\bar{5}i$, acid. hydrobromic, aquæ, $\bar{a}\bar{a}$ $\bar{3}ss$. M. Sig.—Two teaspoonfuls contain 5 grains of quinine. Fothergill's formula for making the acid is as follows: Dissolve $\bar{3}x$, $\bar{5}vi$, grs. xxvii. of bromide of potassium in 4 pints of water, and add of tartaric acid $\bar{3}xiij$, $\bar{3}i$, grs. xxxvij. The hydrobromic acid remains in solution, and bitartrate of potash is precipitated.

Part Fourth.

MEDICAL NEWS.

AFTER a delay of some months, the Crown authorities have appointed Mr Thomas Annandale, one of the teachers of Clinical Surgery in the Extra-mural School, to the Professorship of Clinical Surgery in the University of Edinburgh.

CONFERENCE OF DENTISTS.

A CONFERENCE OF DENTISTS was held in No. 5 St Andrew Square, Edinburgh, on Saturday, 6th October, for the purpose of considering "the future position of the dental profession in regard to means of education, in the event of the present registration movement being successful." Mr J. Tomes, F.R.S. London, occupied the chair, and there was a large attendance of dentists from all parts of the country. The Chairman delivered an opening address, in which he referred at length to the importance of the education and registration movements now going on in the body, and to the necessity for the profession taking a higher position than it has hitherto done. The following resolutions were unanimously adopted by the Conference:—

—1. That this meeting views with satisfaction the efforts which

are being made to unite the Dental Profession under one common designation, and to give the profession a definite legal position. 2. That we are of opinion that nothing but registration and compulsory education will bring Dentistry into a true professional position, and afford the public that amount of protection which it has a right to expect in all professional matters. 3. That it is inexpedient to exact from dental students a greater expenditure of time and money than is necessary for their education as dentists; and we consider the curriculum and examination required by the Royal College of Surgeons of England as one meeting the requirements of Dental Surgery. 4. That in view of the proposed legislation in reference to the dental profession, increased educational facilities are demanded. 5. That a committee, with full powers, be appointed to confer with Dr Smith, and the staff of the Edinburgh Dental Dispensary, as to the expediency of extending that Institution to meet the requirements of the L. D. S. qualification. 6. That the same committee be further authorised to memorialise the Royal College of Surgeons, Edinburgh, as to that body obtaining powers to grant a dental diploma."

Amongst others who took part in the proceedings were Dr John Smith, F.R.C.S.E. Edin.; Dr Roberts, Edinburgh; Mr Campbell, Dundee; Mr Hepburn, Edinburgh; Mr Laws, Bolton; Mr Robertson, Cupar-Fife; Mr Brownlie, Glasgow; Mr J. Smith Turner, London; Dr Chisholm, Edinburgh; Mr De Lessert, Aberdeen; Mr Platt, Stirling; Mr Finlayson, Leith; Mr Wells, Berwick-on-Tweed; Mr W. Bowman Macleod, secretary, etc. Amongst others present were Dr Hogue, Edinburgh; Dr Reid, Edinburgh; Mr Williamson, Aberdeen. In the evening the members of the Conference dined together in the London Hotel. Mr Hepburn, Edinburgh, occupied the chair, and Mr Williamson, Aberdeen, was croupier.

PUBLICATIONS RECEIVED.

- E. B. AVELING, D. Sc., — *Physiological Tables*. London, 1877.
- ROBERT BENTLEY, F.L.S., and HENRY TRIMEN, M.B., F.L.S., — *Medicinal Plants*. Part XXV. London, 1877.
- M. CHARTERIS, M.D., — *Handbook of Practice of Medicine*. London, 1877.
- JOHN DRYSDALE, M.D., — *Is Scientific Materialism compatible with Dogmatic Theology?* Liverpool, 1877.
- Dr FERBER'S Model Diagram of the Organs of the Thorax. London, 1877.
- R. J. GODLEE, M.S., F.R.C.S., — *Atlas of Human Anatomy*. London, 1877.
- R. LIVEING, A.M., M.D., — *Notes on the Treatment of Skin Diseases*. London, 1877.
- F. MASON, F.R.C.S., — *Harelip and Cleft Palate*. London, 1877.
- A. T. NORTON, F.R.C.S., — *The Examiner in Anatomy*. London, 1877.
- C. D. PURDON, M.B., — *Sanitary State of the Belfast Factory District*. Belfast, 1877.
- C. B. RADCLIFFE, M.D., — *Proteus, or Unity in Nature*. London, 1877.
- D. B. ST JOHN ROOSA, M.D., and E. S. ELY, M.D., — *Ophthalmic and Otie Memoranda*. New York, 1876.
- L. A. SAYRE, M.D., — *Spinal Disease and Spinal Curvature*. London, 1877.
- HEYWOOD SMITH, M.A., M.D., — *Practical Gynæcology*. London, 1877.
- C. B. TAYLOR, M.D., — *Lectures on Diseases of the Eye*. III. Squint. London, 1877.
- HENRY WATTS, B.A., F.R.S., — *Fownes' Manual of Chemistry*. London, 1877.
- T. SPENCER WELLS, F.R.C.S., — *Surgery: Past, Present, and Future*. London, 1877.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Introductory Address, delivered at the Opening of the Edinburgh Medical School on 30th October 1877.* By JOHN DUNCAN, M.D., Surgeon, Royal Infirmary.

It has hitherto been the custom that one of your teachers should address to you a few words of welcome as an introduction to the medical session, and my colleagues have this year done me the honour of constituting me their spokesman. If they were somewhat late in arriving at this decision, and if, consequently, the address has been hurriedly composed, you will the more easily pardon the platitudes which are common on these occasions. Possibly it may vary for you the monotony of the note which is usually sounded, that the words I speak were perforce strung together not only under the shadow of Ben Cruachan, but also under certain more dismal shadows, which incline one to preach vanity of vanities. I suppose that, in regarding the career of life (as one is prone to do when in contact with those just entering upon it), a man's mind is like a pendulum—his thoughts oscillate from hopefulness to apprehensiveness according to the circumstances of the moment;—influenced, it may be by external conditions, it may be by the internal arrangement of his digestive apparatus. At one time he cheerfully contemplates those "footprints on the sands of time," of which it seems proper annually to remind you; at another he cynically watches the waves of time which rapidly wash out the unstable track. At one time he glows with admiration of the youth whose banner bore the strange device; at another he considers the lilies of the field, how they toil not, neither do they spin.

My impression is that introductory speeches endeavour to peg this pendulum too persistently to one side; and if for once I let it swing a little, I have no fear but that what evil might otherwise accrue will be abundantly corrected by the past and in the future. Is it not true that the story of what has been done before you, or the dim prospect of what remains to be done, are the whips wherewith you are continually goaded to exertion? Are you not weary

of Hippocrates? Have you not been surfeited with Galen and Ambrose Parè, and Heister with his red-hot iron? Is not Hunter immortalized in a thousand annual addresses as well as in a chancre? Does not Harvey eternally demonstrate the circulation, and Jenner wander among the milkmaids? Why should not you go and do likewise? What strides have been made by the successive discoveries of these great minds, and what from our present advanced position may we not hope to do if we follow their example? But, in truth, I am inclined to think that we have too much of this deification. Success in war depends as much on the bravery of the men as on the skill of the commander; and the advances of medicine are due as largely to the work of the many as to the outstanding conclusions of the few. Great discoveries are most often led up to by a multitude of separate thoughts of separate men, and have consisted in bringing to ebullition what has been simmering in the minds of all. Is there not proof of this in the perpetual disputes as to priority which are associated with every advance? The hour has come for the establishment of some fact or principle; and among the labouring men of the time chance alone has often determined by whose hand it should be done, and to whom the glory should accrue.

The truth is, that the real value of great names is very various, and by no means always in accord with the general estimation. Sometimes it is rather the evidence of its applicability than the ingenuity of the research which has brought notoriety. There have been inferences as ingenious as Jenner's, though they did not save 100,000 lives. Sometimes the lapse of time gathers round the name which stands out all the ideas of his generation. The lesser stars are invisible in the distance, and one shines out more clearly for the apparently general darkness. How little do we know of the contemporaries of Hippocrates! Sometimes, yet again, external or accidental circumstances play a large part in producing the result of which I speak. Should we ever have heard of that poor wrinkled shoemaker of the North but for the fortuitous contact of a clever *litterateur*? Yet his work was good, whether you and I heard of it or no. Fame, then, often attaches to real genius; generally it requires talent and ability, but probably there is essential to this form of success other qualities or accidents less noble than intellectual predominance. It may be well to strive after notoriety; it may be right to urge the example of previous celebrities. The love of fame and power doubtless goes for much in human affairs, and ambition is a powerful spur. But once in a way it may be permitted to address you in less lofty strains, for I do not think that many of you will attain, though many may dream of, this object of desire. We cannot all of us blaze like suns before an astonished universe. There must be some in the rank and file of the great army of physic. Most of you will be content with an ordinary humdrum kind of existence, without startling *denouements*

or brilliant displays. Nor do I think that in these circumstances you will be less happy in yourselves, or much less useful in your day and generation; and if you recognize that the *morale* of our calling depends on the unknown individuals of which it is composed, and that the progress of our glorious science is of infinitely more value than the fame of any one of its cultivators, you will work from a higher motive than that which ambition holds out, and the truth evolving from your labours will be none the less established that it has not been used as a stalking-horse to distinction.

I purpose, then, bearing these things in mind, to say a few words on the profession you are about to enter, and the means whereby you may fit yourselves for your walk in life, inasmuch as that seems to be the natural object, if there be any, of an introductory address.

I suppose that the reasons which have induced you to choose the medical profession are very various, and generally somewhat vague and undefined. With a few, perhaps, the character of the practical work and the individual fitness for it may have formed the leading motive; with others, the attractions of a study whose scientific interest is greater, wider, higher than any other. With some the inducement has been the opening for honourable self-maintenance which medicine holds out with great certainty to him who does his duty; and if some of you have determined your fortunes by tossing a coin of the realm, it is not the first time, nor will it be the last, when momentous issues have hung upon equally insignificant reasons. But whether you have become students of medicine from one cause or another, at least it is of interest and importance to you to know what you have done, to ascertain the kind of life work on which you are about to enter. Now underlying both the motives of your entry and the spirit in which the practice of the profession will be carried on are two fundamental principles, coextensive, doubtless, with human action, but influencing ourselves in a quite special and peculiar manner. It may be that benevolence and self-love are resolvable into identical elements metaphysically, but at least they differ in their results, and in estimating the nature of our calling neither can be ignored. The practice of medicine began when man first tried to help his fellow in distress. Its end is to relieve, to diminish the sum of human suffering, and it is therefore the profession *par excellence* whose motive or reason is pure benevolence. But so soon as it became a profession it was necessary that its professors should live, and, as an inevitable consequence, its practice ceased to be purely disinterested. The question of remuneration arose, with others of kindred nature, and self-love disturbed the purity of its benevolence. These facts are fundamental and self-evident, but they are often ignored, and their just proportion to each other distorted. I should be wrong, on the one hand, to urge on you, as is often done, the elevation of the profession in wealth, in social standing, or in power while forgetting that we can only benefit ourselves by doing

good to others, and that this last is the sole reason for the existence of our profession as such ; but I should be equally wrong to preach to you disinterested benevolence, as if the object of your individuality were purely and simply to benefit your neighbour.

This, then, being the Why, it becomes us to consider the How :— In what manner do these axioms practically work ?

It has often seemed to me that one good method of understanding the nature of a mode of life, is to ascertain its effect on the minds of those who follow it. It is impossible to pass through the world and mingle with men, without observing that every calling leaves its stamp upon the character. No doubt this class peculiarity arises partly from the fact, that each occupation, from its nature, is attractive to a special type of mind ; but there is also an after effect produced by habits of thought, habits of speech, habits of action, which become as much an integral part of the man as his original tendencies and dispositions. Into every profession enter the good, bad, and indifferent, the clever and the stupid, the active and the lazy, but in each these qualities exhibit a distinctive phase. The doctor is medically good or bad, the lawyer is legally clever or stupid, the clergyman is ecclesiastically active or lazy. I am not called upon, and I shall not venture, to analyze the characteristics of those who have been called the Devil's Own, still less of their antithetical complement. But I shall venture to draw your attention to certain medical proclivities, and I shall point out rather the pitfalls into which you may stumble, than the excellencies to which you may attain.

I have already referred to the high scientific interest of the study. It is impossible to name a department of science which is not laid under contribution by the practice of physic. The relation of the human mind to the human body is such that they form a complex whole, and together and separately their actions must be studied both in health and disease. On the side of the mind, we cannot neglect those metaphysical processes and laws which have been deduced from the observation of the mental functions in health, although the anatomy and pathology of the brain, in which so great an advance has recently been made, may afford a surer foothold to the physician. On the side of the body, if we must yet admit a something special and peculiar called vital force, whereby we endeavour to account for things which we cannot otherwise understand, we are yet daily resolving more and more of the bodily functions, both in health and disease, into chemical and physical actions. For purposes of investigation, therefore, as well as for treatment, we draw from regions limited only by human knowledge. As may readily be supposed, then, one effect of the study of medicine on its votaries is to produce a breadth of culture which belongs to no other profession. That man is not likely to be narrow-minded whose education has compelled him to pass all the physical sciences under review, and

yet not to neglect the mental. I do not mean, of course, that narrowness is unknown among us. One-sidedness and mental obliquity no course of education will make to pass from the land. But our bigots are less bigoted than other bigots, our unilateral men are broader than they are found elsewhere. Tolerance, general information, breadth of view, are products of a medical training.

But all good has its corresponding evil. Breadth almost necessarily implies shallowness. When so much must be investigated, it is evident that it can be so only in a superficial manner. Of course, not invariably nor throughout. Fortunately our ranks supply to every science with which we are connected men who attain depth in their specialty, while they retain the professional breadth of view. And so it ought to be even with the ordinary practitioner, but so it often is not. A smattering, so to speak, is all that is required in many of the departments which must be studied, and a smattering is often all that is acquired in any. To the man who masters general principles, who is not easily puffed up, the wideness of range forms an invaluable training; but, on the other hand, to him who simply crams details for purposes of examination, it is a source of sham knowledge and conceit, or at best absolutely useless. There is apt to be begotten a pretension to knowledge not possessed, or a false belief in its possession; the former offensive to one's neighbour, the latter injurious to one's self.

Such is undoubtedly a prominent effect of the *study*, but the *practice* of medicine also induces the development of special faculties or qualities. From the nature of the occupation the perceptive powers are in constant exercise. I believe that in no class of the community is rapid and accurate observation more essential to success, and therefore more highly developed, than in the Doctor. The shifting phases of human life are the kaleidoscopic subject with which he has to deal. A passing appearance, a barely noticeable alteration, may often be the clue which guides investigation or the means of clearing away obscurities. I daresay some of you have heard how the conjuror and his son were in the habit of training these faculties. They would together walk rapidly past a window, and then submit themselves to a competitive examination on the nature of its contents, until in time they were able accurately to describe from this passing glance the entire exhibition of a flourishing toy-shop or draper. To a certain extent this also is required of the physician. He must be essentially receptive, habitually on the watch. He will necessarily become so more or less in the course of his ordinary business; but it is well that you should know how valuable this power is; and I think I may add that it is without a drawback, provided only a check be put upon the tendency to reproduce your observations on unseasonable occasions.

It might be supposed that if we can claim for the average practitioner a high development of perception, we should also be

able to credit him with the power of making logical deductions from his observations. I believe, however, that, for certain reasons inherent in the occupation, we must confess to a general deficiency in accurate and consecutive thought. In many vocations it is essential that the course of action be determined by a balance of probabilities. The judge exists for the express purpose of deciding which of two or more things is likely to be true or just. The commander of an army must take the laws of chance into his calculations. But to no man are the proverbial three courses so constantly open as to the doctor, while at one and the same time three potent disturbing influences are often at work, for he may know only too well that life and death hang upon his decision, that he must make up his mind at once, and that the premises are insufficient for the conclusion. These circumstances are not favourable for logical processes of thought. No doubt, for many contingencies he is prepared beforehand. The experience of others (and especially here does personal experience become valuable) has determined the course to follow, and the matter is one simply of observation and memory. But it is impossible for forethought to meet every eventuality when the permutations and combinations are infinite. The practitioner has daily opportunities for the exercise of reason, and often in its exercise he is placed much in the position (with which I greatly sympathize) of the ass between the bundles of hay—with this difference only, that time is not given to him as it was to the ass. Now the effect of this upon the mind varies according to the original temperament and mental training. One class of men are perpetually hedging; they avoid logical induction by coming to no conclusion at all. This may be a pleurisy, a pleurodynia, a pain in the liver, or incipient zona. How shall I treat my patient so that I may do him as much good and as little harm as I can, whichever it may be? A gentle aperient and emollient poultices. Is this a strumous or a syphilitic caries? Whichever it is, we had better scrape out the diseased bone and give cod-liver oil.

But with another class the effect is very different. Some indication that it is one thing rather than another seizes upon the mind. It may be that it is the most obtrusive feature of the disease; it may be that it has been picked out from its obscurity with painful labour. But if it turn the balance in favour of pleurodynia, this type of practitioner will hardly believe his patient though he die of his pleurisy. It is this habit of thought—determined thought, one may call it—which, as it seems to me, gives rise to the conflict of medical opinion in our courts of law. We are often taunted with this conflict as if it implied moral obliquity. It means merely a deficiency in logic. The case is presented from one point of view, and, under prejudice, the arguments on one side lose their due proportion to those on the other.

Whether, then, the conditions under which the practice of our

profession must be carried on have one effect or the other, whether they induce a habit of hedging or render a man unable to see other than one face of the shield, they are unfavourable to the formation of logical habits of reasoning. Both forms of defect are exceedingly common, and I think it well that you should recognise that it is so.

On the other hand, however, the very exigencies which lead to these defects evolve also certain good qualities. It is impossible to ignore the fact that they create a readiness of resource and a coolness under difficulties which we may put on the credit side of the ledger. These are attributes of the profession which will come to most of you as you gain experience—to some sooner, to others later; to some in a high degree, to others in a lower. I need not, therefore, dwell on them farther than to advise their cultivation to the utmost of your ability.

On the moral character of the physician the effect of his calling is equally a curious mingling of good and evil. In some respects it is unmitigated good. Though we can hardly claim a high motive for it, but must attribute it to the knowledge that otherwise we should make our calling impossible, yet we may well be proud of the fact that no class of men (dispersed though we be over the whole surface of the globe, and everywhere the repositories of sins and secrets) are so free from the vices of sensuality, are able to keep the mere animal appetites more completely under control, are more pure in their life and conduct. Yet, farther, by being frequently exercised, the benevolent faculties are generally fostered and stimulated, and a readiness to do good even at the expense of personal discomfort and inconvenience is one striking characteristic of the profession.

But if in these respects we are free from blame, in others, it must be confessed, we fall short of a high ideal.

One chief moral obliquity of the profession is quackery, by which I understand generally a pretence, for selfish purposes, to knowledge or power which is not possessed. The tendency to it is shown in that mass of pretenders who hang on the outskirts of the profession, the camp-followers and plunderers of our army, the bone-setters, the electricians, the rubbers—shall I also say the homœopaths and the hydropaths, and the followers of other such like paths into which sometimes even good men are led? With these, of course, we have nothing to do. We can afford to ignore them, and we assume no responsibility on their account. But they indicate a direction in which a danger surrounds us, a snare into which we are apt to fall. Indeed, within the pale of the profession lies a mass of quackery which we cannot ignore, which it is our duty, yours and mine, to eliminate so far as may lie within our power, not by denunciation of individual sinners, nor by unseemly strife, but by maintaining in our own persons a high standard of professional honour, and thus, by raising the general tone, to bring the practice into universal contempt.

The temptations to quackery are varied and considerable. The experience of practice is, that when the medical man has failed in his intention, or has not achieved the highest success, from want of knowledge, want of skill, or some other defect on his part, gratitude is as often elicited as it is by the most perfect and brilliant piece of workmanship. The attention and care which are bestowed in the one case, the apparent ease and simplicity in the other, bring it thus about. Now, this unequal distribution of the reward which of all others is most grateful to us, a necessary consequence of necessary ignorance, is undoubtedly demoralising. Men feel, and are tempted to act as if they felt, that it is not the intrinsic excellence of their work, but the parade which accompanies it—not the real knowledge and skill, but the impression conveyed by the mode of its exercise, the air of self-confidence, of ease, of consideration—which brings the largest return. The reality is apt to be abandoned for the show. Yet, again, without the confidence of your patient it is impossible that his treatment can be carried out profitably to himself, satisfactorily to you. This confidence may be gained by empty pretension. The ease with which ignorant credulity can be imposed upon, tempts to assertions of knowledge, power, or skill greater than are possessed. Sometimes the desired impression is conveyed by judicious dealing with the individual patient; it is sometimes attempted on a larger scale. In certain not-distant quarters of the globe it is a recognised mode of obtaining distinction, to write, it may be even merely to advertise, a book on some limited but frequently diseased portion of the human frame. It is of no consequence that experience is *nil*. In a large town, the number of diseased bladders, or urethras, or livers, or rectums, is considerable, and experience of their treatment will come if the advertisement be successful. Such is the quackery of specialties, and to the same category belong the habitual nostrums, the persuasive pills, and all the host of tricks by which the needy man hopes to gather, the successful man to keep, his practice.

You are entering, then, or are already engaged in, the study of a profession of which these, as it seems to me, are the leading excellencies and the snares. I have not neglected to point out that it develops acuteness of observation, breadth of view, morality, and benevolence; but I have dwelt rather on the shallowness, the illogical habits of thought, and the quackery which luxuriate, because while it is important that you should attain the former, you are more likely to do so than to avoid the latter. Much is gained if the ends to be attained, the evils to be avoided, be mapped out in your minds, however imperfectly. The rest is matter of care and perseverance. It resolves itself into the old *γνωθι σεαυτον*. Watch the tendencies of your natural dispositions. Observe those things which attract, those which repel. Endeavour to estimate their real value and importance, and so pursue or avoid them.

I need not, therefore, enter into details as to the methods to be pursued for the preservation of your individual moralities. We are in the habit of hearing laudation of many specifics with that end in view. There has been much talk of late of the advantages to be gained from the supervision and discipline of collegiate institutions, and efforts have been made, and with some success, to introduce the English monastic system into our schools and colleges. I can see no harm, but much good, from the establishment of convenient boarding-houses, possibly under University control. But I believe they are applicable only to a small minority of our students, and I feel assured that arguments in their favour are not to be drawn from the increased morality that would ensue. In no profession more than in our own should a high moral tone be early developed; but I attach infinitely more importance to self-watching and self-culture than to external or academic restraints. I am sure that the general character of our Scotch students will compare favourably with those of Oxford or Cambridge, and I do not think that in this respect the medical student differs from those of his kind in other professions. I even incline to hold that our black sheep are less numerous than in the other faculties.

I have no doubt, also, that you have heard much of a mysterious entity called professional etiquette, sometimes insisted on with solemn earnestness, sometimes held up to undeserved ridicule. When you enter upon practice, you will find that it consists merely in a code of unwritten rules deduced by experience from the general doctrines of morality. I think you will speedily discover that you need not fear etiquette if your conduct be guided, in reference at once to your patients and your compeers, by the two golden rules, Do to others as you would that they should do to you; and, Be not ready to take offence. Observe strictly the laws of honour and truth yourself, and interpret leniently the actions of others which are or seem injurious to you.

But equally important with these moral maxims, and what more immediately concerns us, is the purely professional self-culture and the acquisition of the knowledge which is to enable you to fulfil the duties of your after life.

I have observed that, in the acquisition of professional knowledge, there are two ways in which students go wrong. There is one set of men for whom the practical side of the profession has an irresistible attraction. They are active, energetic, restless. They rarely open a book, or only under dire necessity. Before they have mastered their anatomy or physiology, they have delivered fifty women, assisted at all the major operations, cut off fingers, opened abscesses by the score. They have put up a hundred microscopic preparations and performed many sections before they have a notion of pathology. They will deal in the most potent drugs, set a fracture, or stomach-pump a fellow-creature, though they have no idea of the symptoms of the disease, injury,

or poisoning which they treat. But there is another set of men on whom examinations lie like a nightmare. These burn the midnight oil. They take copious notes of lectures. They study with care the peculiar views of their future examiners. They practise artificial mnemonics, and cover reams with abstracts from their books. They shrink from practical responsibility. They are doubtless obliged to attend six cases of midwifery, but they carefully arrive after the completion of the operation. They keep in the background at the infirmary, and shirk work as dressers and clerks. They feel only the necessity for being thoroughly crammed.

Both methods are essentially wrong. It is impossible to be a good practical physician without having laid a foundation of scientific principle. In the midst of innumerable details, the mind is lost if it be not able to refer them to system, to arrange them correlatively. And, on the other hand, the man who has acquired merely bookish learning enters on practice at an enormous disadvantage if he have no knowledge of the application of its general laws, or of the thousand and one little things which are only to be acquired by clinical work, and which, if they be not so acquired, must be afterwards erroneously and ignominiously picked up from nurses and old wives.

An outcry is often made that our system of teaching is responsible for these errors. I do not believe that it is so. On the contrary, one of the strong points of our modern method is, that men have the most ample opportunities of going wrong in both ways.

The student of to-day certainly has facilities for the acquisition of practical knowledge, which even so lately as my own student days were only to be obtained at Continental schools. Now, not only are there classes of practical anatomy and chemistry, but also of physiology, pathology, medicine, surgery, and other departments. But these valuable facilities are not to be held responsible or made the excuse for a neglect of literary effort.

The system of examinations has also been greatly developed, and, of course, its evils are manifest in tending to cramp teachers and turn them into cramblers, and in directing the student's study into fixed and invariable grooves. But not less manifest are their advantages, not only in raising the standard of knowledge in the profession, but also in forcing the learner to that reproduction under disturbing influences, without which his knowledge will avail him little in his subsequent career. We cannot do without them. I should, perhaps, be inclined to increase their frequency and diminish the range of each. But under any arrangement their advantages far exceed their disadvantages, and it is not to be laid to their charge that practical work is neglected by some.

But whatever may be the cause of the errors that prevail, I wish to impress upon you the fact that a due combination of theoretical and practical study is necessary to your comfort and success; and

on the part of my colleagues I offer you opportunities for this combination such as have existed only in recent years. I believe that never at any time were the resources of our medical school greater than now.

No doubt, I have to record since last year many changes in our teaching staff. It is inevitable that it should be so. The Edinburgh School is undoubtedly the most important institution in the kingdom for the training of teachers of medicine. We supply vacancies in the medical staff not only of our own University, but throughout Great Britain and its dependencies. The most regrettable announcement which I have this year to make is that we are unable to supply you with a course of Physiology. It has unfortunately happened that our able lecturer on that subject, Dr Smart, prostrated by illness, was obliged to resign his office shortly before the opening of the session, and we have not been able to supply his place in the time at our disposal. But this very defect is a proof of our efficiency, for it arises from the fact that we have recently supplied professors of Physiology to Manchester, Glasgow, Aberdeen, and St Andrews. We have to regret also the loss of our colleague, Dr Matthews Duncan, who has carried to what many may be inclined to call a wider sphere of usefulness those brilliant talents and that ripe experience which have already secured for him a position of rare eminence in the medical world, and which are certain to ensure his success in his new vocation. The number of our lecturers on Clinical Surgery has also been diminished, but we feel that Mr Annandale is not completely lost to us by his promotion to the chair of Clinical Surgery in the University of Edinburgh. We know that he will worthily fill one of the most distinguished posts in British surgery, and that whatever strengthens the University will also strengthen the Edinburgh School of Medicine.

But notwithstanding these losses, I think I may say that, so far as teaching power is concerned, our school never was stronger. Confident in this, and that zeal on your part will not be wanting, I welcome you in the name of my colleagues, and I fully believe that this session will not be behind others in the amount of good work accomplished ere it close.

ARTICLE II.—*On a New Preparation for allaying Irritation of the Actively Secreting Mammary Glands.* By HUGH MILLER, M.D., Physician-Accoucheur, Glasgow Lying-In Hospital.

THE treatment of the breasts by an application of the active principle of either the belladonna leaf or root is not a new proposal. As far as I have been able to ascertain, it was introduced to the notice of the profession in the *Dublin Medical Journal* of 1834. Since then,

one or two short notices of its value in affection of the mammae have been contributed to the journals. In 1860, Dr Marley gave a statement of his views on the efficacy of the drug for this purpose to the Obstetrical Society of London. While belladonna was generally recognised by these authors as a reliable local sedative in the treatment of painful affections of these glands, it remained for Dr Fordyce Barker, in his excellent work on *Puerperal Disease*, to point out more clearly its value in acute affections. In his experience, "belladonna not only relieves the pain resulting from the tension of the tissues, but from its power of relaxing muscular fibre, it seems to allow a more free exit of milk by dilating the lactiferous tubes; and within a few years past, it has been believed to possess the property of arresting the lacteal secretion. But of this I am certain, that it is a most valuable application to the breast in glandular mastitis, and I have used it for this purpose for more than twenty years."¹

The cases in which the preparation has been applied, are those in which acute congestion occurs in the mammary glands when beginning actively to secrete. The sudden and copious flow of milk is accompanied by the determination of blood to these organs, rendering them peculiarly liable to inflammatory affections; and this condition seems to be more readily induced, when, either through sore nipples or other causes, the female breasts are prevented from efficiently performing their function as excreting glands. With most mothers, on the second or third day at latest after the completion of labour, the breasts are observed to become firmer and sensitive to the touch. It is a condition which may be temporary, or one which a saline draught may readily relieve. Its continuance depends on the activity of the lacteal secretion. Should the flow of milk continue,—and in the majority of cases I have met with it has done so,—the secretion must either be withdrawn by the infant, or in those cases where this means is not available, the plan hitherto has been to continue the saline, and to allow of a certain amount of engorgement taking place in the hope that the secretion will gradually cease in the absence of the stimulus of suction. In my experience, in the majority of such cases, the secretion goes on and the breasts continue to increase in size; when still left alone they become hard, more painful to the touch, and at length the distension is so excessive as to excite inflammation. In the event of suppuration occurring, one gland usually becomes affected in the first instance, and the disposition to congestion generally spreads rapidly, involving the whole of the glands, and often the connective tissue surrounding them.

This condition of the mammary glands was a frequent source of anxiety to me until the perusal of Dr Barker's Lectures—suggesting belladonna—led me to adopt the plan of treatment which I now propose to lay before you. For some time I had been dissatisfied

¹ Page 158.

with my management of the breasts where an active treatment of them had to be employed. I had used the various liniments and ointments, and I was satisfied that frequently only an imperfect trial was given to the remedy, since complaints were made that repeated frictions could not be persevered in owing to their increasing instead of relieving the pain; and in those cases where rubbing in the remedy was an essential to the treatment, I thought the objection, when urged, was a reasonable one. With a view to avoid friction and to secure the full therapeutic effect of the belladonna, I had an alcoholic extract prepared of double the strength of the *Emplas. belladonnæ*, but kept fluid by collodion. Camphor was combined with it for the purpose of aiding to arrest the natural mammary secretion. This preparation,¹ now shown, is painted on the breasts much in the same way that you would use blistering fluid. No rubbing in is necessary. The fluid dries quickly, is much more cleanly for the patient, has a less offensive odour than the ointment, and, in my experience, it is more reliable in its action.

This liquid preparation is painted over the affected parts of the breast night and morning, until the acute symptoms give in. Indeed, it can only be of service as a good local sedative when the free and frequent application of it to the affected part has been persevered in until decided results are secured. During the past, I have used this preparation with very satisfactory results. Whether the inflammatory irritation accompanying the onset of the lacteal secretion had for its exciting cause exposure to cold, inflamed nipples, or obstruction in the lacteal ducts, the preparation has always seemed to be of value. I have also used the preparation beneficially, by applying it to both breasts every day when the mother did not intend to suckle her child; and from the frequent opportunities I have had of observing the result, I am satisfied that it may be safely relied upon for restraining the secretion of milk, and acting on the walls of the arterioles so as to prevent engorgement. It has the advantage over the old plan of evaporating lotions, in that it is more cleanly, and is more comfortable to the patient. When the remedy is employed to prevent the secretion of milk forming at all, I have found it best to begin applying the liquid from immediately after the birth of the child. I anticipate the lacteal secretion, and endeavour to prevent its formation. The *Emplastrum belladonnæ liquidum* has hitherto given very satisfactory results in these cases. Whether this result would have been so satisfactorily accomplished had I waited until the breasts began to secrete milk, I am unable to say. When endeavouring to allay any irritation of the glands by the external application of this fluid, I

¹ The paper was read before the Medico-Chirurgical Society of Glasgow at their November meeting; and the preparation then exhibited was made for the author by Mr Whyte, of Brown Brothers & Co., pharmaceutical chemists, Glasgow.

push the remedy until a decided local effect be secured. In such cases I paint the breasts daily or oftener. I also insist upon the patient giving the whole organ rest by remaining in the recumbent position, and having the breast properly bandaged. The milk, when present, should be periodically drawn off until the organ returns to its healthy state. I may add that, should it become necessary to relieve arterial tension, a small dose of aconite frequently repeated will be necessary; and when sympathetic fever accompanies the disorder a saline should be given. With reference to the question of diet, I can only repeat what I have already urged as a rule of practice—"to select her diet as near as possible to the kind of food which she is in the habit of consuming;"¹ and whenever the mammary glands become irritable, withdraw as far as practicable the portions of diet which are fluid." Even when this is done, it does not follow that the lacteal secretion would thereby be diminished. When the irritable condition of the glands requires treatment during the first few weeks after confinement, the change in diet may produce no effect on the mammary secretion, from the disintegrating uterus supplying a sufficiency of material to the lactiferous ducts. When involution of the uterus is complete, the effect of a liquid diet is very marked on the amount of the milk secreted. In all cases, therefore, where it is desirable to moderate the flow of milk, attention to the kind of diet partaken of will be necessary, and food as far as possible solid will require to be enjoined upon the patient as an essential to successful treatment.

ARTICLE III.—*Observations on Antipyretics.* By JOHN A. ERSKINE STUART, L.R.C.S.E., Prestonpans.

DURING the past year an immense number of cases of rheumatic fever, typhoid fever, and other febrile conditions, have been treated successfully, and carefully noted in the medical journals, the antipyretic system of treatment by salicylic acid and its congeners being employed. Almost no explanation of the action of these drugs has been attempted by writers in this country, but from abroad we have many papers on the subject. At a meeting of the Edinburgh Medico-Chirurgical Society, held on December 6, 1876, an interesting discussion on antipyretics arose on a paper on the treatment of an epidemic of typhoid fever by antipyretics by Dr George Hunter of Linlithgow. A number of medical men were present who had used salicylic acid and its congeners largely in various cases, and a great difference of opinion seemed to prevail regarding the *rationale* of their action. My object, therefore, in writing this paper, is to try to explain by a few observations of my own, which may be taken for what they are worth, how these drugs act. I shall,

¹ *Brit. Med. Journal*, 1871, vol. i. p. 446

therefore, first take up the vegetable antiperiodics, and then salicylic acid and its congeners, and strive to show that they act in precisely the same way, and that they are not only internal antiseptics, but that they have a certain action on the vascular system.

Vegetable Antiperiodics.—These are quinine, salicine, and bebeerine. Binz is of opinion that quinine is an antiseptic, and a protoplasmic poison; also that it prevents the emigration of leucocytes, and restrains the dilatation of bloodvessels. Jerusalem-sky's views are somewhat similar. He found that the red corpuscles became larger under the influence of quinine; that small doses act as tonics to the heart, while large doses cause paralysis of that organ, and cause the blood-pressure to sink rapidly. The question with which we have to deal at present is this,—How does quinine reduce temperature? Is it by acting on the germs of disease, or by some peculiar action on the heart and bloodvessels? I have proved that quinine, salicine, bebeerine in solution are incapable of restraining the putrefaction of fresh urine exposed to the atmosphere, but that when administered internally they are capable of reducing the temperature in febrile conditions to a most marvellous extent.¹ It is, therefore, more than probable that quinine is transformed into some antiseptic substance in the blood, and that this body exercises a paralysing effect on the microzymes in the blood. It is now well known that a large dose of quinine is as powerful in reducing high temperature produced by exercise, as it is in cases of fever presumably due to the presence of germs in the body. It is, therefore, a matter of certainty that it produces its antipyretic effects not only by exercising its antiseptic action on the tissues, but also by its action on the bloodvessels in raising the blood-pressure,—a low blood-pressure, according to Ackermann, leading to high temperature and increased tissue-change. An excellent application of this latter theory is carried out in the treatment of sunstroke, or heat apoplexy, where paralysis of the vaso-motor system of nerves is present, by the employment of quinine. The actions of quinine, bebeerine, and salicine may be taken as similar, their antipyretic action being due partly to their tonic effects on the vascular system, and partly to their antiseptic action on the microzymes which are supposed to be the cause of the fever. Until we know more regarding the etiology of rheumatism, it is useless to conjecture how salicine acts in that disease. It is well known that quinine is quite as efficacious in the treatment of rheumatic fever as salicine, but the latter, being a novelty, has attracted more attention. One property common to salicine, salicylic acid, and the salicylates, is that they have no power of reducing temperature in a person in a state of good health, and also, I am inclined to say that salicine and salicylic acid have no beneficial action on heart-affections when the temperature has

¹ *Edinburgh Medical Journal*, December 1876.

fallen to the normal. Dr Maclagan of Dundee states this latter fact regarding salicine, and I think those who have used either salicylic acid or the salicylates will bear me out in saying that these latter drugs are powerless for good when the temperature is either normal or nearly normal, as in subacute rheumatism, where the employment of these remedies is attended with almost no effect whatever. I have pointed out that salicylic acid taken internally by a healthy person in large doses, such as 2 scruples, produces no effect on the temperature and pulse, and that beyond producing constipation, catarrh of the pharynx, and giving to the breath for several days a strong smell of its solutions, it has no further action.¹ In corroboration of this, Dr Danewsky says "that salicylate of soda produces a very inconstant and inconsiderable influence on healthy men and animals, but in the febrile state it is most powerful." In this respect there is an analogy between this action in febrile conditions and the action of ergot on the pregnant uterus, or digitalis on the dilated heart. Dr Danewsky again states that in the febrile state there is a diminution of blood-pressure, but when salicylate of soda is given the blood-pressure rises, and promotes the elimination of caloric.

Salicylic Acid and its Congeners.—As salicylic acid is now generally employed as the salicylate of soda or potash, I made trial of these in several cases, and found that, if used for a few days, depression and vomiting invariably came on. As I had a bad case of rheumatic fever under my care early in March of this year, it occurred to me that small doses of carbonate of ammonia combined with the acid might counteract the depression and vomiting. A week after this case of mine had been successfully treated by this combination, Dr Ogle, in the *British Medical Journal* for March 17, suggested ammonia as a combination, but did not bring forward any cases. In the *Medical Examiner* for April 19, 1877, Dr Barclay of St George's Hospital places on record a case of rheumatic fever treated successfully by the combination, in which the temperature fell three degrees after six doses of the medicine had been administered. A friend of mine in London, who has found salicylic acid valuable in rheumatism, wrote me in spring that he always combined it with the carbonate of ammonia. As the only recorded case treated in this way which I have observed in the journals is that of Dr Barclay's in the *Medical Examiner*, I take the liberty of giving the notes of a case treated successfully by salicylate of ammonia. It is by the kindness of Dr Sanderson of Musselburgh that I am permitted to give the following notes of a case which I had under my care while assisting him during last winter.

Case of Rheumatic Pericarditis and Endocarditis treated successfully by the Salicylate of Ammonia.—On March 9, 1877, I was called to see A. C., millworker, an anæmic girl of seventeen, who was

¹ *Edinburgh Medical Journal*, November 1876.

suffering from a cough and profuse expectoration. I found that there was distinct evidence of the presence of bronchitis, and ordered an expectorant mixture, with but little benefit. The patient at this time complained but slightly of pains in the joints, and therefore the possibility of rheumatic fever did not present itself to me. On Sunday the 11th I found the patient very much worse, the breathing very much accelerated, and considerable dyspnœa. The pulse was quick and irregular, the temperature excessively high, but owing to these notes being written some time after the case was attended, I failed to keep a register of temperature and pulse. The patient was covered with a profuse acid-smelling perspiration. On examining the chest it was found that there was great swelling over the left side, and on placing the hand over the præcordium, a rasping sensation was communicated to it. On percussion, it was found that there was complete dullness in front from the clavicle above to the foot of the true ribs on the left side. On auscultation, the double-friction murmur was heard all over the cardiac region. It was now clear what was the true nature of the case. The treatment which I adopted in the first instance was the application of a blister (4×4) over the heart, and the internal administration of powders, consisting of calomel (1 gr.) and Dover's powder (5 grs.) every three hours. This treatment was carried on from the Sunday evening till the Tuesday evening, the patient being at that time worse instead of better. On the Monday the breathing was very much impeded, greatly increased action of the right lung being present, due to the great quantity of effusion on the left side. On the evening of Tuesday, finding no improvement, I adopted the following formula:—

R Acid salicylæ, \mathfrak{z} ij.
 Ammon. carb., \mathfrak{z} iss.
 Aquam, ad \mathfrak{z} vj.

Sig. A tablespoonful every three hours.

On visiting the patient next day, I found that she had experienced great good from even the first dose of the medicine. The heart was much quieter in its action, the effusion had begun to lessen, and in a week, still continuing this treatment, the effusion had entirely disappeared, and the swelling on the left side subsided. The double frottement murmur had entirely disappeared, and in its place I now heard at the apex a distinct systolic bruit, telling of temporary mischief, at least, in the endocardial lining of the mitral valve. The patient still continued the salicylate of ammonia, and informed me that it had a most wonderfully quieting effect on her heart when its action was disturbed in any way. Having occasion, about a month after this date, to examine this patient's chest, I was delighted to find the heart-sounds entirely normal. In conclusion, I may say that no stimulants were administered during the whole course of the disease, the patient's dietary throughout consisting of milk and beef-tea.

I must now draw my remarks to a close, and in doing so, I would say that the combinations of the acid with iron and quinine have proved very successful in treating pyrexia. The latter, introduced to the notice of the profession by Dr Graham Brown,¹ is, according to some, the most powerful antipyretic extant.

ARTICLE IV.—*Antiseptic Treatment of Chronic Bursitis.* By ROBERT ROXBURGH, M.B., etc., late Resident Surgeon, Clinical Wards, Royal Infirmary, Edinburgh.

THE following cases, which occurred in the practice of Mr Chiene, while he lately had charge of the Clinical Surgical Wards of the Edinburgh Infirmary, illustrate the great advantage of catgut as the means of drainage in certain antiseptic wounds.

I.—J. R., a miner, æt. 18, was admitted, 10th Sept. 1877, with an enlargement of the bursa patellæ, associated with pain, particularly on movement. No distinct history was forthcoming, but he had only suffered pain and inconvenience for a week. The skin having been purified with strong carbolic lotion, a small incision was made with a tenotomy knife into the bursa under the spray, and about half an ounce of sero-sanguineous fluid was squeezed out. A few threads of fine carbolized catgut were then introduced with sinus forceps, and the usual gauze dressing was applied, the limb being bandaged to a posterior splint. The dressing was left untouched for ten days, during which the patient never complained of pain, and on its removal on the tenth day the bursal swelling was found to have entirely disappeared, the tiny wound was completely cicatrized, and the portion of the catgut skim outside the wound was lying on the skin just as it had been left, but cut off by the cicatrix at its point of exit, so that it could be rubbed away with the finger. The patient returned home cured.

II.—L. F., a pawnbroker's assistant, æt. 16, was admitted 13th Sept. 1877 with chronic bursitis of the knee, which she declared she had only noticed a fortnight previously, and which during that time had been causing her considerable pain. She could assign no cause for the swelling.

The treatment was identical with that in the former case. The fluid was straw-coloured, and amounted to a few drachms. The dressing was allowed to remain for ten days, when on its removal the swelling was found to be gone, the wound healed, and the remains of the catgut drain lying loosely on the skin.

In both cases the discharge on the dressing consisted merely of a serous stain, without a trace of pus.

These cases are examples of an important surgical principle. The object aimed at was not obliteration of the sac, but simply

¹ *Edinburgh Medical Journal*, November 1876.

and solely relief of tension within it. The epithelial cells lining the bursæ had acquired the habit of over-secretion—a habit set up in the first instance by injury from without, but now perpetuated by the mechanical irritation of distension. As in other analogous cases, a temporary abandonment of the habit was all that was necessary to insure a return of the cells to their normal condition. This was accomplished with the least possible disturbance of the parts, and with almost no pain to the patient, while the drain, being of an absorbable material, permitted a free exit for discharge, but did not stand in the way of healing.

It may be claimed for this method of treatment that it is more certain and more rapid than counter-irritation, and much less painful than free incision, or injection with iodine; while in simplicity, a feature rarely attributed to antiseptic surgery, it could hardly be surpassed. One dressing only was used, and the spray was required but once; for although it was used as a precautionary measure during the removal of the dressing, experience would probably warrant us in guaranteeing that in non-suppurative chronic cases, such as these, healing would be complete in the ten days allowed. It is scarcely necessary to note that an essential of success is the careful exclusion of fermentative mischief from without. Had putrefaction occurred, suppuration would in all probability have followed; the catgut would have been insufficient to drain away the dense viscid pus; accumulation within the sac would have taken place, necessitating free incision; and so the cure would have been rendered comparatively tedious and painful.

ARTICLE V.—*Ueber eine neue Methode zur Vervollständigung des Unterrichtes in der Gynäkologie.* Vortrag, gehalten in München am 15. September 1877, von F. WINCKEL, Dresden. Mit VI. Tafeln.

ON the 15th of September last, previously to the annual meeting of German physicians and naturalists, a number of the leading gynecologists of Germany met together to form a German Gynecological Congress. We look with high expectations for the production of much valuable material from the new society. The titles of the papers read at their first meetings awaken our interest, and we have been favoured with an early copy of one of the contributions, which many of our readers will thank us for bringing under their notice; for, apart from its own merits, the author has long been known as one of the soundest and most practical of Continental workers in this department of medicine.

The contribution comprises letterpress giving an account of a new method of mounting and preserving naked-eye pathological specimens, and is accompanied by six photographic plates of speci-

mens so mounted, illustrating the pathology of the female sexual of organs. Every one who has had to do with the preservation naked-eye specimens knows that, as a rule, the result is not very satisfactory in so far as any demonstration of them in class-rooms is concerned. The amount of distortion produced by the glass jar and spirit refracting the light passing through them, the diminution of light from the opacity of the top cover, as well as the gingerly method with which they require to be handled, render their accurate inspection a matter of difficulty for the student. The simple method by which Professor Winckel obviates these defects is as follows:—

A zinc frame, about 7 inches broad and 8 inches in length, has the open space enclosed by it filled up with a series of vertical and horizontal brass wires plated with zinc. In this way a number of small regular apertures about $\frac{1}{4}$ inch square are formed. On both sides of this frame, vertical or transverse sections, about a third of an inch thick, of the specimens are fastened by threads. The frame or series of frames is then dipped into a glass jar containing spirit to be kept until required. When needed, they are lifted out, allowed to drip, and then used for teaching purposes. Among the advantages claimed by Dr Winckel for his method are the following:—The hearers see the preparation direct without any distorting medium such as glass and spirit. Personal demonstration of the preparations to each student is unnecessary. An illustrative series can be mounted on one frame, thus rendering the demonstration complete. Lastly, the frames are easily handled; a great many can be kept in a single jar; and, especially, a large number of sections of the same pathological condition can be made from one specimen. If the frames require to be carried any distance, then a small tin box, provided with a handle, renders this matter easy.

If we now turn to the photographs, we find that in the first plate we have a photograph of one surface of such a frame, with no fewer than thirty-one preparations of the *os uteri*, showing its various forms in young nulliparous females, *stenoses*, *atresia*, etc. The next plate, which is a photograph of the obverse of the same frame, shows the appearances of twenty-four specimens of the *os uteri* in women who have borne children. Thus, on one frame we have no fewer than fifty-five preparations of variations in the *os uteri*. The method is also extremely valuable for the exhibition of vertical sections of the uterus. In this way, fibroid tumours in their various relations to the uterine coats, total or partial obliteration of the uterine cavity, antelexions, retroflexions, etc., can be shown to the best advantage; and from the number of sections possible to be made, a single specimen can be utilised to the utmost. The adoption of such a simple plan would render available for teaching purposes much of the valuable materials going to waste in our pathological theatres. Among the preparations of the ovary is one of special interest. We refer to the ovary from a

woman who died after a severe burn, showing hæmorrhage into the Graafian follicles. The later hæmorrhages from the bowel in such cases are pretty well known; but fewer instances of the above have been recorded.

From what we have said it will be easily seen that the general pathologist, physiologist, and anatomist will also find this plan of Professor Winckel one of great use in their departments. Thus, sections of the various lesions of the liver, intestine, kidney, etc., could easily be mounted as we have described, and in this way the points of comparison and distinction between such lesions readily demonstrated and observed.

We hope that this short notice will draw the attention of pathologists and teachers to a simple, effective, and thoroughly useful means of mounting and preserving wet preparations.

ARTICLE VI.—*On the Etiology and History of Leprosy.* By
W. MUNRO, M.D., London, late of Cupar-Fife.

(Continued from page 440.)

HAVING thus, in what has preceded, completed the history of leprosy, I will now consider the etiology of the disease by itself, in considering which our knowledge of its history will greatly assist us.

I know of no question in regard to which more rash opinions have been ventured than the one I am now entering on, or in which opinions have been more utterly opposed to one another. The great error I have observed to pervade all such opinions, is that they have almost invariably been founded on local observation only, each author emitting an opinion as to the causation of the disease mostly in accordance with the conditions of the locality in which he happened to observe it. This remark certainly does not apply to the conclusions come to by the Royal College of Physicians, who had quite an "embarras de richesse" to choose from in the shape of confident opinions coming from all parts of the world, this especially applying to the non-contagious nature of the disease; but unfortunately, to any one acquainted with the manner in which such questions were answered, such returns for the most part are more worthless than the paper they are written on. It is to be particularly remarked that in countries where the most leprosy prevails, as Demerara, medical men are most convinced of its contagious nature;¹ where there is least (comparatively), the

¹ Drs Manget and five others—all those whose reports the Coll. of Phys. publish (p. 45)—consider that it *is* contagious, and speak of such cases known to them. It is therefore surprising to find Dr Milroy quoting (p. 10) six other gentlemen, "some of the most experienced men in the colony," and *omitting all mention of the contagionists* except Dr Manget, whose cases, he simply says, are meagre in their details.

The chief argument of the non-contagionists is that they have not seen the

opposite is the case, as in India, where *the disease is not studied*; ¹ and a medical man may spend years without having more than a passing glance at a few cases, *unless he searches them out*. The

disease produced during cohabitation for years, yet he takes no further notice of Dr Manget's first case,—an Englishman who became a leper after living with a leprous coloured woman, who had a child by him. Yet at p. 29 Dr Milroy boldly quotes the "*expressed opinion*" of the medical men of Demerara against contagion, and goes on to say, "My own personal observation and inquiries have all tended to the same general result, namely, that the spreading of leprosy is not due to contagion;" but at p. 41, he admits "leprosy appears to me neither more nor less contagious than scrofula, and what Dr Williams says of consumption *is equally applicable* to the other cachexy," viz., "both reason and experience indicate that such a noxious influence may pass from a patient in advanced consumption to a healthy person in close communication, and *may produce the same disease*." I can respect a change of opinion in such an author as Erasmus Wilson, who in 1856 (*Lancet*, March 1st) wrote, "the doctrine of infection and contagion has long been abandoned," while in 1873 (*Lancet*, February 15) he strongly upholds the contagion theory, thinking "it may even be conveyed by exhalations given off by the leprosy." Such a change was doubtless the result of *long* research, but for the vacillating indecision of Dr Milroy's self-contradiction in the same Report there is no such reason.

¹ This is stated in regard to Demerara by Manget (see Rep., p. 48); as to India by Carter (p. 117), who repeats the remark in his later reports; and in the Mauritius by Regnaud (p. 83); and again, at p. 241, Erasmus Wilson speaks of a medical officer of the Indian army, himself a leper, who, *along with other medical men in India*, did not recognise the nature of his own case, but looked on it as one of syphilis, from which indeed he had suffered previously. This gentleman had never seen a case of leprosy, from which Wilson hastily and erroneously concludes "that the disease is not so widely distributed in India as we have been accustomed to believe,"—an idea disproved by the census of India, which shows its universal existence throughout the country, although in the North-West Provinces (in which this gentleman seems to have resided) there is less (next to Mysore) leprosy than in any other presidency, the census returns giving only 1 in 3046 (1 in 2500 being probably about the truth), so that unless a man searched it out he might easily spend years without seeing cases, though not one district is free from it. Yet there is no part of India from which more positive replies, founded on negative evidence alone, are given as to the disease being absolutely non-contagious. Only three reporters out of forty-two think it is contagious. One gentleman in Jansi candidly says he "only met with one or two isolated cases during a residence of eight years, and his attention was not called to it till the receipt of these questions" (Col. Phys. Rep., p. 151). (It is to be remarked, however, that in a remote mountainous corner of these very North-West Provinces, in one division—Kumaon—there are more lepers to population than in any other division in India.) I specially notice that where the census returns show *fewest* lepers, there the conclusions against contagion are strongest. Thus from Banda, a district with a very high proportion (1 in 717), there is an uncertain report; from Budaon (1 in 2174) a positive opinion in favour of contagion; in Benares (1 in 2777) the opinions are against it; while in Etawah (1 in 12,500) the decision of expression is worthy of note, "I have never known the disease to be contagious either by proximity or cohabitation." No doubt, as Lewis and Cunningham point out, the hospital experience at Almorah, Kumaon, is against contagion, and they contradict (p. 58) two cases reported in the Coll. Phys. Rep. (p. 141) of attendants said to have become affected; but I beg to submit at once that a hospital is the worst place, with its *absolute cleanliness* both of persons and things, in which to draw any conclusions in regard to the non-contagion of the disease, which I have already said appears to require long-continued contact or inoculation and a

same is the case in the West Indies, where, to my own knowledge, men may and do pass years of their lives without even seeing or knowing or caring more of lepers or leprosy than to pass them on the road, yet it is on the negative evidence of men so situated that the conclusions of the College of Physicians were drawn up. For instance, from Grenada, *where the disease is very rare*, there is one negative report from Dr McIntyre, who says, "I have met with no such instances"¹ (of contagion); and this and such like reports are allowed to overweigh as evidence such positive observations as are recorded on the same page by Dr Aquart, simply, it appears to me, because the negative witnesses were greater in number than the positive; the utter worthlessness of such negative evidence appearing more strongly when it is remembered that Grenada has but few lepers on which to make observations—only, it is stated, about *half-a-dozen in all*.²

The same tendency to accept and even extol evidence without sifting its true value (which, it must be said for the College of Physicians, it was hardly in the nature of things possible for them to do), is seen in Dr Milroy's report, where (p. 16) he gives extracts from an "able report on leprosy by Dr S. H. Harris," in which the latter gives *decided opinions* as to the causation of the disease, the said opinions being, in fact, a mere repetition of some of the most undecided and least valuable ideas extant on the subject. Dr Harris says, first, that the influence of climate is "the most potent cause;" secondly, diet; and thirdly, habits of the people. As regards climate, he says *malarial poisoning* is the *primary* cause, and says, "it may briefly be remarked that their dwellings" (of the subjects of the disease) "are generally situated in the vicinity of marshes and of low elevation, or in some *well-known malarial part*." He also speaks of their filth, and their bodies "being only partially clothed." Dr Harris is quite as positive as to its being non-contagious; his words are, "*I am of opinion* that further experience will teach us that it is not communicated by contagion if we confine ourselves to the strict definition of the term."

Reading such an "able report," and such positive opinions, one naturally inquires in what extensive field of observation, or over what period of time, did Dr Harris's observations extend. He *had only been appointed to Montserrat a very few months when the Report was written*.³ The island contains about 8000 inhabitants; in the lazaretto, near Plymouth, are six or eight lepers, while as many more, so far as I could ascertain, were, when I was there (although I had no chance of making such extended inquiries as I did in St Kitts, such inquiries requiring actual residence), scattered over the

subject prepared for its attacks. That hospital dressers *do* sometimes contract the disease is certain, however, as in three cases reported by Hildebrand and Rose (Macnamara, pp. 22 and 57).

¹ Coll. Phys. Rep., p. 36.

² Vacc. Rep., Bakewell's Evidence.

³ Before being appointed to Montserrat, Dr Harris was in Cunard New York Liners and Liverpool Hospital.

island. Now, so far as Dr Milroy's extracts show, Dr Harris never inquired even into the number, much less the intimate individual history, of the cases either at the lazaretto (which, I believe, was under Dr Johnson's care) or elsewhere, such inquiries, which take both time and trouble, being absolutely necessary as a foundation for the formation of any opinions on the subject. Again, as to malaria being the primary cause, it is, to say the least, strange that such an opinion should have been adopted in an island having quite its fair share of the disease, *in which there is not enough level ground to form a croquet green*, the name Montserrat plainly expressing its topographical features. As to the value of Dr Harris's *opinion*, formed on such observations (!), I think I need say nothing. His remarks about clothing also do not apply.

If I have appeared to say too much in regard to this gentleman's "observations and opinions," it is because I look on such as a fair specimen of the "authentic evidence," as Dr Milroy calls it,¹ as supplied to the Royal College of Physicians and himself, leading them and him to conclusions as to the non-contagious character of the disease, and the non-necessity for segregation of those attacked by it, which I have not the slightest doubt will have, from their being acted on by the Imperial, Indian, and Colonial Governments, the most disastrous effects in the future, and tend greatly to the continuance of the disease, if not to its actual increase.

It is to be hoped that such real evidence as has been advanced by Carter² as to the value of segregation, may come to be acted on, and the building of proper asylums or villages for the diseased may be encouraged, or at least not discouraged, by Government, as it has been since the College of Physicians published their Report.

The various causes which have been advanced as sufficient to produce or increase leprosy may be classed under Climate, Poverty and Malthygiène, Heredity and Contagion. The idea that certain races are more obnoxious to it than others has also been advanced.

Climate may be considered under Tropical Climates and Malaria. Residence near the sea and great rivers is another point which might be considered under this head, but may be more conveniently spoken of when treating of Food, such residence being chiefly

¹ Rep., p. 65. I may appear unfair to the non-contagionists, and, so far as those who *have* made *bona-fide* observations, would regret exceedingly being so, but I must remark that the simple fact that a man *can* point to cases of contagion, shows that he has paid some attention to the disease; when he cannot, it proves nothing, unless he has had years of observation and numerous cases, and even then he can only fairly say that it is not easily communicated.

² Rep. on Lep. in Norway, pp. 23 and 24, and Report of 1876, p. 20, where he points out a fact lately elicited in regard to the people of India, "that relatives of all degrees live together in little communities," and almost admits that it is contagious,—saying, however, "we should act as if the leprous plague were really communicable."

supposed to have some influence in causing leprosy, because fish is generally the chief diet in such situations.

Tropical Climates.—Some authors, as Hobson, who observed that leprosy only existed in South and not in North China, and Thomas, have looked on true leprosy as a disease which could only exist in hot climates, an idea that the whole of the history at once contradicts. At the same time, the history as clearly shows *that it has never arisen spontaneously, and attained its full development to the typical form of the disease, except in the tropics*, unless when conveyed out of them by contagion.¹

This, and the decidedly beneficial effect produced on the disease in those who have contracted it in the tropics, amounting, in some cases, to an entire arrest of the disease, when they came to reside in a cold climate, would tend to show that, with other depressing influences, that of a tropical climate may be an adjuvant factor in the primary production of the disease.

*Malaria.*²—That malaria has no necessary connection with leprosy, although at first sight it would appear so from its great prevalence in such a place as Demerara, is shown by its prevalence in other places where no such influence exists. In St Kitts, on the windward, coolest, hilly side, there was in 1871 much more leprosy (1 in 306) than on the leeward, hottest, and lowest side, where the proportion was 1 in 452. This same proportion obtained in 1817. My own, the No. 1 district, once somewhat malarious (the only one that ever was so), now, at least in the town, well drained, but still exposed to slight malarious influences occasion-

¹ The Ngerengere of New Zealand is, at first sight, an apparent exception to this, but it must be remembered that that is not a *typical* form of leprosy, and it is far from unlikely that the differences I have already pointed out are the result of the climate of New Zealand not being a tropical one,—this adjuvant factor in the production of the disease thus being wanting, a want not sufficient to change the type of the disease elsewhere, when conveyed by contagion, but sufficient when the disease is, so to speak, struggling into existence, to do so. Again, the New Zealanders *may* have brought it with them from Samoa or Fiji, from which they appear to have immigrated to New Zealand.

² Liveing (p. 67) says erroneously that leprosy is rare in dry localities in India, and points to its existence on the moist banks of the Nile and low-lying levels of South China as proof that malaria has a causal relation to the disease. E. Wilson also speaks of its "origin" on the "marshy" banks of the Nile, with the same view (*Lancet*, Mar. 1, 1856). Unfortunately for the theory of these authors, it has one fault—being opposed to facts. So far as Egypt is concerned, it has the driest climate in the world, and Larrey (*lib. cit.*, p. 243) distinctly states that leprosy is *not* seen on the coasts (where round the bitter lakes there may be some malaria), but is common (*règne*) in *dry* and arid places near the *deserts* (not near the Nile) in Upper Egypt. Liveing's statement in regard to India is contradicted by facts soon to be stated; and in regard to China, while the disease is almost unknown to the north of the Yang-tse-Kiang, the Hoang-ho, north of it, flows through a flat country *below* its own level, and parts of the banks of the Yellow Sea are highly malarious. The malarious theory has also been adopted without sufficient inquiry by others, as St Vel ("Maladies Intertropicales," p. 478), and Cazenave and Schedel (*lib. cit.*, p. 356), Holmsen of Norway (*Landre*, p. 75), etc.

ally, had fewer lepers (1 in 503) than any other district in the island. In Africa it is seen on the malarious coast at Sierra Leone, *but chiefly among natives of the interior*. It is unknown in Dahomey, a malarious place, and on the upper tributaries of the Amazon, which, as Bates mentions (p. 95), are highly malarious. It is common on the coast of Bergen, in Norway, where there is no malaria. In India, as already mentioned in a footnote, it is most common in a mountainous division of the North-West Provinces, and is known to be common in Nepal; and another focus is in the district of Beerbhoom in Bengal, with 2872 lepers in 695,921 of a population,¹ or 1 in 243. This is a dry undulating district, with a semi-civilized population. Burdwan *District*, in the same Division as Beerbhoom (the Burdwan Division), has 1 leper in 442, it being partly malarious; while Hoogly, "a hotbed of malarious pestilence,"² another district of the same division, has only 1 in 1444.

In what I have already said in the history, it is easily seen that the disease has spread in all kinds of places, and in what I have to say on sea-coasts, further proofs will be adduced that malaria and leprosy have no necessary connexion. I may here mention its prevalence in the inland towns of Arabia, where there is no malaria, and that it is known only in the elevated dry districts of Persia, and unknown in the marshy swamps near the Caspian.³ Finally, there is no malaria in the Sandwich Islands, where it has spread so rapidly.

Food.—The use of fish, and, with this, residence on sea-coasts and the banks of great rivers, have been put forward by many as causing leprosy.⁴ That the opinion is erroneous the following facts show:—In Norway, leprosy certainly exists mostly along the coast-line (leading authors in that country to the opinion), but even there in varying intensities, being, for instance, unknown in the town of Bergen among the people of that place,⁵ and very severe in the north of the province of that name, while there is little of it in the south of the next province to the north of Bergen. On the northern and southern coasts of Norway it is unknown. It is unknown among the pure fishermen in the islands of Norway.⁶ It is unknown in Newfoundland, a great fishing country; indeed, the history has shown us that it was unknown throughout America before it was introduced, though on the west coast the natives were chiefly fish-fed. Menol, on the ground that in Madeira, on the northern side, there are only 15 lepers in 20,000 people,—that

¹ Census of Bengal, p. xevii.

² *Ibid.*, p. 91.

³ Coll. Phys. Rep., p. 71.

⁴ Daniellssen and Boeck, p. 138; Virchow, p. 507; Wortabet, *op. cit.*; T. Fox, Ed. Med. Jour., March 1866, p. 802; H. H. Wilson, *op. cit.* (quoting from Hindu authors); Peacock (Lisbon), *Lancet*, 1870, p. 770; Hutchinson, Atlas of Skin Diseases, Catalogue New Syd. Soc., p. 92; Coll. Phys. Rep., *passim*, etc.

⁵ Carter, Rep. on Lep. in Norway, p. 10 and map, and Daniellssen and Boeck, p. 372.

⁶ Carter, Rep. on Norway, p. 10.

side being about 1000 feet above the sea, while in the southern side there are 73 in 25,000,—concludes that it never spreads far from the coast. That his conclusions are totally without foundation is at once apparent, on comparing these statistics with those I collected in St Kitts, where I have already shown that the conditions are exactly the reverse of those obtaining in Madeira, the northern, windward side, high above the sea-level and with few fishermen (16 in 9475, or 1 to 591 of population), having fifty per cent. more leprosy than the southern side, where fishing is constantly carried on, and where the census returns show 143 fishermen in 18,524, or 1 in 130 of population.

The prevalence of leprosy on the high table-lands of Central Asia already mentioned; in Bokhara and Samarkand; in the mountains of Samen in Abyssinia; in the mountains of Lebanon, and *not* on the coast of Syria;¹ in arid Cephalonia;² in Sicily, where the proportion in the interior, from a late inquiry, appears as 5 lepers to 9000, while on the coast there are only 2 in 9000 of population;³ in the mountains near San Remo in Italy;⁴ in Madagascar, 7000 feet above the sea-level;⁵ in the interior of Africa, 100 miles from the Niger, the nearest large river;⁶ on the table-land of Mexico;⁷ while in Brazil it is seen *chiefly* in the *interior* provinces of Minas Geraes and Matteo Grosso;⁸ in the Rio de la Plata States, chiefly in Parana and Uruguay, inland provinces;⁹ in Bogota and Socorro on the Andes,¹⁰ and in Quito,¹¹ while it is unknown in Peru and Chili; all these facts show that the opinion as to the prevalence of leprosy being in any measure dependent on proximity to the sea or large rivers, *except in so far as these are great pathways of human intercourse*, is utterly erroneous.¹²

¹ Wortabet, *op. cit.*

² Coll. Phys. Rep., p. 67.

³ Profeta, Sulla lepra in Sicilia, 1875, quoted in Lewis and Cunningham's Report on Leprosy in India, 1877, p. 24.

⁴ Report on Leprosy in North Italy, &c., 1876, Carter. It still lingers in San Remo and Varazze.

⁵ Coll. Phys. Rep., p. 220.

⁶ Caillé, *lib. cit.*, p. 402, and map.

⁷ Simpson (quoting Cheyne) *op. cit.*, p. 402.

⁸ Hirsch, p. 321.

⁹ *Ibid.*

¹⁰ *Ibid.*, p. 325. Humboldt (Travels and Researches, p. 325) notices that Santa Fe de Bogota is 8727 feet above the sea-level, higher than Mount St Bernard.

¹¹ I would here for a moment revert to a part of the subject already considered, to point out how much confined the disease has been to the eastern side of the Andes, where the aboriginal natives were not fitted for work, and it was necessary to import negroes; whereas in the western coasts, as any reader of Prescott knows, the aboriginal Peruvians and Chilians were, and are still, the labourers of the country, and negroes were not required.

¹² Just as highways might be said to be a cause of its prevalence, because it is sometimes noticed to affect severely a whole string of villages intervening between two larger towns (Carter's Report, 1876, p. 19). He says also, "A similar line may follow the banks of a main river." In China it is as common in the interior as on the coast (Coll. Phys. Rep., p. 78); and is necessarily so on the banks of the great rivers, *where nearly all the population is crowded*, the rest of the country being, in comparison, deserted. (See "All Round the World," p. 133.)

More proof, if more is wanting, is shown in the late census returns of India, to the same effect. No doubt, as I already stated was my belief, those returns greatly understated the true number, and this is confirmed to even a greater extent than I supposed by Dr Carter, in his last (1876) report already quoted, which I received a few days ago, in which,¹ quoting Major Watson's scrutiny of the numbers in four divisions or counties in Kattiawar, Gujerat, with 220,000 inhabitants, he states that not one-half appear in the census returns; yet, as the same difficulties were to be met with in the ignorance and suspicion of the natives all over India, for purposes of comparison of the numbers in one part with those in another, the census may be taken as correct enough to show where it is most prevalent. I have already spoken of its prevalence in Kumaon;² it is also common in Bangalore, 3000 feet above the sea-level.³

In Bengal, Orissa and Chittagong, both sea-coast divisions, have only about 1 leper in 3400, and Rashaye, an inland division, 1 in 1453; one of the districts in it near the Himalayas, Rungpore, having 1 per 1000.

Turning to Bombay, we find that the census returns show the less the seaboard and the fewer great rivers in each division, the *more* leprosy there is. This is contrary to the hastily-drawn conclusions of Liveing,⁴ and to a certain extent to the more cautious estimates of Dr Carter, who thought there was more leprosy in the Konkan than the Deccan. The Deccan, with no sea-coast, and elevated, has 12 lepers in 10,000,⁵ the Konkan 8 to 10,000, it having sea-coast on one side; in Gujerat, a peninsula, 5 in 1000; and Scinde, a country traversed by the Indus with its numerous large tributaries and mouths, has only 1 in 10,000.⁶ No doubt, in some instances there may be, as Carter thinks, within certain districts, as Kattiawar, Gujerat, more leprosy near the sea-coast, though his figures by no means show that there is, they not being relative, but absolute. He says, "Limiting the coast district to five miles from the sea, I find the disease commonest towards the sea,

¹ P. 18.

² Lewis and Cunningham attempt to explain its prevalence in Kumaon by its proximity to Nepaul, because the greater prevalence of leprosy is seen in the *eastern* side of the division bordering Nepaul, forgetting, or not noticing, first, that in Gurwhal, the western division of the province of Kumaon, it is *more* prevalent than in Kumaon proper; in Dehra Doon, on the south-west, it is as prevalent, there being 19 in 10,000; while in Bignoor and Bareilly, to the south of Kumaon, the latter partly bordering Nepaul, there are only 5 in 10,000; secondly, in the districts *bordering Nepaul to the south* there is less leprosy than in almost any other part of India: thus, Barrackpore has only 23 in 100,000; Burtce, only 9 in 100,000, or 1 to 21 of the number in Kumaon (see census of N.-W. Provinces, p. 9).

³ Coll. Phys. Rep., p. 188.

⁴ *Lib. cit.*, p. 66.

⁵ Census of Bombay, part 11, table vi. p. 7.

⁶ Unfortunately, white leprosy, kod or simple leucoderma, was confused with "black" or true leprosy, except in four districts, two of these being in Scinde, one in Gujerat, and one in the Deccan (Census, p. 215); however, if these districts are examples of the others, what I have said above is only more fully borne out.

namely, in the proportion of 100 to 71 inland."¹ But then he admits that the *normal* populations *may bear the same ratio*. Even if he is right, his explanation, that it appears to have been introduced by sea and is spreading inwards, would fully account for the numbers being greatest near the coast, while the fact that the people are "pure agriculturists," fish being little consumed,² shows that the greater prevalence near the coast has nothing to do with a fish diet.

Evidently, then, proximity to the sea or great rivers, or a fish diet, are not factors in the production of leprosy.

Note.—In a former paper (p. 336) I stated on authorities then before me that leprosy was, in British Burmah, most prevalent among the Chinese and Bengalese. That it is common among the population as a mass, however, is seen from the report on the census of British Burmah, recently published, and quoted by Drs Lewis and Cunningham in their Report (p. 9), which I received while writing the preceding pages, and from which it appears that there are 11·6 lepers per 1000, or fully double the number shown in the Bengal census.

(To be continued)

ARTICLE VII.—*The Antiseptic Dressing of Wounds.* By JOHN CHIENE, Assistant-Surgeon, Edinburgh Royal Infirmary.

(Read before the Medico-Chirurgical Society of Edinburgh, 7th November 1877.)

ANTISEPTIC surgery at present labours under two disadvantages: the expense of the dressings, and the constant necessity for using a spray-producer.

These objections would be overcome by any one who believed in the necessity of preventing putrefaction. Unfortunately, the majority of the profession do not believe in this necessity; or if they believe in the necessity, do not believe that the methods recommended can prevent putrefaction. It is therefore self-evident that a decrease in the expenditure and a simplicity in the application may encourage the profession to give this method of treatment a trial; and after they have tried it and seen the results, they may then be led to believe the truth of the principle on which it is founded.

The object of this short communication is to lay before the Society certain considerations, which, if adopted, may, in the first place, lessen the expenditure; in the second place, do away with the constant necessity for the spray. These considerations have occupied my attention for some years, and as opportunity offered in the Clinical Surgical Wards, I have by experiment tested their practical utility.

First, The Lessening of the Expenditure.—There can be no doubt whatever that a very great increase in the expenditure has lately

¹ Carter's Rep., 1876, p. 18.

² *Ibid.*

taken place for surgical dressings. The dressing that is now almost universally used is Lister's Antiseptic Gauze. To decrease the expenditure, three methods are available: first, to cheapen the gauze dressing; second, to use a cheaper material than gauze; third, to use a more durable material than gauze. The cost price of the charged gauze in the Edinburgh Infirmary Wards is at present $2\frac{1}{4}$ d. a yard; and it is difficult to see how the cheapening process can go on much further. In order to obtain a cheaper material than gauze I have during the last two years, along with Mr Gunn, in the laboratory of the Edinburgh Infirmary, been experimenting with different varieties of paper. Paper impregnated with carbolic acid, and with salts of carbolic acid, has been tried upon wounds in the Clinical Wards; but at the present moment I cannot say that I have yet obtained a paper dressing as efficient and cheaper than the antiseptic gauze. I hope, however, to continue these experiments during the ensuing winter, and to lay the results before the Society at some future time. Along with these experiments, I have been using systematically, since 1875, sponges wrung out of 1 to 20 carbolic lotion, and applied over the deep dressing before the application of the outer dressing; by this means I have been enabled to lessen materially the quantity of gauze used at each dressing. I have further been enabled to dress the wounds less frequently than before. The sponges improve with use. If obtained at wholesale prices from dealers in sponges, and if small sponges are used, they can be obtained at a remarkably cheap rate. The authorities of the Royal Infirmary of this city obtained for me, for 3s. 6d., 60 small sponges weighing 1 lb. The smaller the sponges, the more easily they can be applied. These sponges may be stitched together, forming a layer; or they may be laid singly on the deep dressing, and held in position by the outer dressing. Before application, the carbolic lotion must be squeezed from the sponge. The sponge is applied practically dry. The channels in it by capillarity suck up the fluid discharges; and if a catgut or horse-hair drain is used, the sponge may be looked upon as a direct continuation of the catgut or horse-hair drain; or if an indiarubber drainage tube is used, the power of the sponge may be likened to the suction power of a syringe on drawing up the piston. It is evident, then, that the use of the sponge has other advantages besides decreasing the expenditure, and I would strongly recommend their systematic use in the antiseptic treatment of wounds. It is no uncommon thing to find that the spongy layer, acting as a reservoir, is so saturated with the discharge that the external gauze dressing is little altered; and I have frequently, in large recent wounds, squeezed from the sponge from six to ten ounces of dark-coloured serum, which must of necessity, if the sponges had not been used, either have remained in the wound, causing tension, or have passed into the gauze dressing, necessitating its removal at an earlier period. The sponges not only decrease the expense, but they lessen the risk, and save time and trouble by reducing to a

minimum the dressings of the wound. They have another manifest advantage in cases in which bleeding is feared; the resiliency of the sponges enables the surgeon to apply firm pressure without injury.

Second, Is there any way in which the surgeon may dress his wounds without the constant aid of the spray producer?—Mr Lister long ago demonstrated that the spray is not required during the dressing of a superficial wound, as an ulcer. Can we in any way so alter the external conditions of our deep wounds that they will resemble a superficial wound? If this can be done, then the spray will not be required as long as these conditions are kept up. During the last two months I have attempted in several cases to comply with these conditions. My success has been such that I feel justified in stating the simple method adopted. The cases were a parotid tumour, an excision of an epitheliomatous tumour of the arm, an amputation of a great toe, and excision of the elbow-joint. In these cases a permanent deep dressing was applied on the day after the operation, and fixed in position either with a bandage or with some sticky material, such as Canada balsam, or a solution of guttapercha in chloroform. From the experience I have had in these cases, I am of opinion that if the dressing is so arranged as to be perfectly porous, and if an absorbable method of drainage is used, as catgut, it will not be necessary to remove the deep dressing until the wound is superficial. As long as the deep dressing is in position, the spray will not be required. All that is necessary is to remove the outer dressing when the discharge reaches its edges; to damp with carbolic lotion and salicylic paste the deep dressing, and to apply anew an external dressing. It must be remembered that the deep dressing has lost its antiseptic qualities, while it remains, as long as it is covered by the outer dressing, perfectly aseptic. It must, therefore, be thoroughly damped with carbolic lotion whenever it is exposed to the atmosphere, in order to destroy any mischief that may have fallen upon it during the exposure, and in order to render it actively antiseptic, so that when the dry gauze dressing is applied over it, no mischief may pass from it through the deep dressing into the wound. The spray is used at the operation and at the first dressing, and afterwards only when the deep dressing is removed. I have found, as yet, a gauze bandage the most suitable method of fixing the deep dressing on the limbs. This method is therefore available in all operations on the limbs. A bandage may also be used in many wounds of the trunk. In some, however, it cannot be satisfactorily applied, and some trustworthy adherent material has yet to be found which will fix accurately the edges of the deep dressing to the skin, leaving the centre of the dressing porous, so as to allow of the free escape of the discharges. This method has another advantage; it approaches more nearly to the perfection of healing by "scabbing," and the wound is not irritated by the carbolic spray when exposed by the usual method.

I am well aware of the imperfections which have yet to be

overcome, but any considerations which have for their basis the lessening of the expense and simplicity in application, will, I believe, further the advance of the antiseptic system.

Note.—In the discussion which followed the reading of this paper, Dr Watson alluded to the importance of seeing the wound and to the important practical question—Are the pulse and temperature sufficient indications that there is no tension? In my reply I forgot to take notice of this, and it may perhaps be well here to state, that if there is neither a rise in pulse nor temperature, and if there is no pain in the wound, in my opinion the drainage may be considered to be efficient and the wound free from tension.

ARTICLE VIII.—*Coal-Gas Poisoning. Successful Case.* By
H. G. MACBAIN, L.R.C.P.E., North Berwick.

(Read before the Medico-Chirurgical Society of Edinburgh, 7th November 1877.)

I THINK it right to bring before my professional brethren this case of coal-gas poisoning and its favourable result, as there have been several fatal cases cited in the *British Medical Journal*, 1875, and newspapers.

Miss D., aged 50 years, went to her bedroom on the 17th January 1877, about midnight; undressed, turned the gas off at the tap, no stop being on it; turned it round, opening the tap again, allowing the gas full play. Being deficient of the sense of smell, went to bed, the room being nine feet by nine, and no fire-place. About eight o'clock in the morning the servant perceived on passing along the passage a strong smell of gas. She went upstairs, and on passing Miss D.'s bedroom she heard an unusual snoring sound. Being alarmed at the sound and strong smell of gas, instead of opening the door she hastened downstairs and informed one of the young ladies, who rushed up, opened Miss D.'s bedroom door; was instantly met with an almost overwhelming volume of gas. Placing a handkerchief over her mouth, forced her way towards the window, succeeded in throwing it open, and shut off the gas. She tried to arouse Miss D., but could not; sent for me. In half an hour I arrived, the whole house smelling with gas. Going to Miss D.'s bedroom, she was lying in bed on her left side, with her knees drawn up (as if natural), breathing stertorously, and insensible. As her face was towards the wall, I turned her round on her back. The face swollen and of a dirty-white colour; eyes shut. On lifting the eyelids, the eyes turned slightly upwards, exactly like a patient under chloroform. Both pupils semi-dilated, equal, and insensible to light; jaw spasmodically contracted, and so firm I could not open the mouth. Lips red and natural, and when touched with the finger suddenly contracted forcibly, as if the patient was determined you should not separate the lips. Removing the

finger, the orbicularis oris immediately relaxed; all other muscles of the body flaccid.

I forgot at the time to examine the state of the masseters, whether they were in a state of tonic contraction, or merely acted like the orbicularis oris; but I am inclined to think, like the latter, Pulse 110, small, weak; breath smelling strongly of gas. Temperature of skin felt normal (unfortunately had not my thermometer by me); had passed urine involuntarily in bed. I gave an unfavourable prognosis to her friends; however, ordered her removal immediately to a large airy bedroom, and to be placed between blankets, a large fire lit in the grate and the window opened. This being accomplished, a change began to show itself, the muscles of the arms becoming rigid, with a jerking stertorous breathing; pulse very small and more feeble; intermittent, could not be counted.

Never having a case of the kind before, reflecting over what I had read of like cases, Dr Lockie's very interesting case in the *British Medical Journal*, 1875, Sir Robert Christison's *Treatise of Poisons*, Taylor's *Medical Jurisprudence*, and lastly of the case before me; when suddenly I remembered the words of my much-lamented teacher, Professor Miller of Edinburgh, which were always sounding and do still sound in my ears, although twenty-five years have passed away, *Remove the cause*. In this case the gas was the cause, and how to rid the system of it was the first question which would naturally arise in the mind. Remembering the great function of the lungs in throwing off impurities, particularly in a gaseous form, it was doing its work; the breath smelt of it, yet it was too small an organ to accomplish it in time to save the patient's life. Happily there remains another organ (if the expression may be allowed), the skin, which would do twenty times as much work in the same space of time, especially if pressed. Heat therefore, if applied to the skin, would be the agent most likely to accomplish the purpose. Pint and soda-water bottles were filled with as hot water as they would bear, at the same time obtaining a supply of worsted stockings, immersing them in as hot water as could be wrung with the hand. In each of the stockings was placed a hot bottle. Ten to twelve, being thus prepared, were laid alongside of the patient, then covering her with an abundance of blankets. To save repetition, the bottles and stockings were recharged every hour up to eight o'clock in the evening. This vapour bath, if you please to call it, was got ready by half-past nine o'clock A.M. The head and face freely exposed to a plentiful supply of fresh air.

The first notable effect was the stertorous jerk in the breathing. It began to subside about three-quarters of an hour after the bath was begun. On removing the blankets a quarter of an hour after (an hour having elapsed since the bath was begun), the arms were passive; the skin perspiring, but not profusely; breathing easier; pulse 110, regular, feeble. Half-past eleven o'clock, two hours in the bath; breathing natural; pulse 110, feeble; perspiring

profusely; no other change. Two o'clock P.M., breathing natural; pulse 120, feeble; perspiring profusely. It was thought she moved an arm; no other change. Four o'clock P.M., had moved both arms two or three times; moved head once to the one side; pulse 120, feeble; no other change. Six o'clock P.M., looked about, but could not speak; pulse 120. Eight o'clock, could say only Yes or No. Took a few teaspoonfuls of beef-tea; removed bath, got her made comfortable. Ten o'clock P.M., answered question correctly, took beef-tea and a little brandy-and-water. Next morning was all right, complaining only of weakness, and of some blisters caused by the hot bottles. In three days was up, walking about. Made a perfect recovery, although a little weak for three or four weeks.

I may add that about six o'clock in the evening she afterwards told me she knew every one of her friends and heard every word they said, although she could not move beyond what I have already stated.

ARTICLE IX.—*Practical Observations on some of the more Common Diseases of Early Life.* By CHARLES BELL, M.D., Fellow of the Royal College of Physicians, Edinburgh, &c.

(Continued from page 407.)

TONGUE-TACKING.

ALTHOUGH this condition of the tongue is occasionally met with, it occurs much less frequently than is generally supposed by inexperienced mothers and ignorant nurses, who always imagine, when a child does not fasten readily to the breast, that it must be tongue-tacked; and it is often very difficult to persuade them that the aversion to suck is owing to their own awkwardness in applying the child to the breast, or to the peculiar form of the nipple, and not to the extension of the frenum. Yet so great is the dread of this trifling malformation that many fatal consequences have followed the injudicious snipping of the frenum by self-sufficient and ignorant nurses, who, in their anxiety to remove the malformation, either wound the ranine artery and vein, or cut the frenum so extensively that the tongue is drawn back when the child sucks, and suffocation takes place.

When a case of tongue-tacking occurs requiring operation, the tongue is found to be bound down so that it cannot be pushed beyond the gums, as the frenum extends to the very tip of the tongue; and in some instances it forms a furrow when the child attempts to push it forward, or when it cries.

The Operation.—Although this is a very simple process, it requires to be done with great caution, so as to avoid wounding the sublingual bloodvessels, which would bleed profusely, and in

all probability prove fatal; or the frenum may be cut too extensively, as has already been referred to. In order to guard against such accidents, it is advisable to use a curved bistoury in place of scissors, and the slightest incision is all that is necessary, as the frenum readily tears after its anterior edge is cut. The incision should be made from within, outwards. In some instances, although the frenum extends to the tip of the tongue, it is not necessary to operate, as the frenum may be so elastic that it does not prevent the child from sucking.

OCCCLUSION OF THE MOUTH.

This is extremely rare at the full period of pregnancy, although it is occasionally met with in premature children, and it is very difficult to remedy it. Mr Forster mentions one case in which the mouth was so small that it only admitted a bougie. He enlarged it by making an incision at both angles, but without success, as the contraction returned, and the child died.¹

HARE-LIP.

This deformity is so named from its great resemblance to the hare's lip. Like many other malformations, it is sometimes hereditary, and therefore may occur in several members of the same family. Mr Forster² mentions one family in which there were nine children. The two eldest had hare-lip and imperforated anus; the third had defective palate and imperforated anus, but the lips were natural; the fourth, fifth, sixth, seventh, and eighth had no deformity; the ninth, however, had imperforated anus. The father had hare-lip, and it was operated on late in life, after which his wife had two children healthy and well formed.

In general, the fissure in the lip is accompanied with a corresponding deficiency in the bony palate, which produces the peculiar tone and indistinctness in the articulation which is so characteristic of this kind of malformation. In some rare cases there are two fissures in the lip, a circumstance which renders the deformity more unseemly, and the operation is in general less satisfactory in its results. There has been great differences of opinion in regard to the period when the operation should be performed, which is the only means of removing the deformity. Abernethy advised its being performed before the second year; Lawrence suggested that it should be performed between the third and fifth month; Liston that it should be done between the second and third year. Forster was in favour of its being performed as early as possible after birth in order to avoid the shock to the mother, and to enable the child to suck, which it cannot do easily without an artificial palate, when the palate is defective. Besides, he considered the risk of the early operation was less than that from artificial feeding, and the excessive salivation which always accompanies the defect.

¹ *Surgical Diseases of Children*, p. 315.

² *Op. cit.*, p. 30.

The operation has therefore been performed within seven hours after birth; and experience proves that the cicatrix becomes much less apparent in after years when the operation is performed early. Mr Syme operated successfully on a patient of mine when only a few weeks old. Sir Astley Cooper¹ objected to the early operation, because he considered that it was liable to produce fatal convulsions.

Dupuytren objects to an early operation on the ground that the flesh of the infant is so soft that the pins are apt to cut their way out.² Samuel Cooper,³ on the other hand, was in favour of an early operation because it tends to promote the union of the palate. He therefore performed the operation four hours after the birth of the child.

IMPERFORATE ANUS.

This is an extremely rare malformation—so much so, that Collins met with only one case during his Mastership of the Dublin Hospital, during which he had the opportunity of examining 16,654 children; and Dr West states that Dr Zöhrer of Vienna met with only two cases in 50,000 children. Notwithstanding these facts, there have been three different forms of the malformation put on record, having the same general symptoms, the most prominent of which is obstinate constipation. This is soon followed by great distension of the abdomen, vomiting, and extreme restlessness. Sometimes the child cries bitterly, at other times it merely whimpers, showing a sense of great uneasiness, accompanied by violent straining. These symptoms in general soon cease, and the child dies from exhaustion. The duration of life under these circumstances is variable, but it seldom extends beyond a week. There are instances on record, however, of children lingering for several weeks; and Mr Arnot relates a case in which the child lived for seven weeks and three days. On examination after death the colon was found to terminate in a cul de sac, and the rectum was entirely absent. Dr Bedford mentions a case of a child a week old on which he operated with success, although the child was reduced to great weakness in consequence of having been unable to retain anything on its stomach for four days, and was unable to suck. It afterwards became a strong and healthy child.⁴

Dr West has collected seventy-five cases, which he has arranged into different classes: viz., in seventeen the rectum was entire throughout its course, but the anus was occluded by a membrane, or the adhesion of its walls, near its terminus. In twenty-nine cases the anus was closed, and the rectum opened either into the urethra, bladder, or vagina; in thirty-nine cases the rectum was

¹ S. Cooper's *Surgical Dictionary*, p. 868.

² *Op. cit.*, p. 369.

³ *Ibid.*

⁴ *Op. cit.*, pp. 295–325.

not only occluded at the anus, but malformed. In some of the cases it was defective in a great part of its extent.

Treatment.—From the description now given it will appear that there is no other mode of cure of this malformation than by an operation, the precise nature of which will depend on the kind and extent of the malformation. If the rectum is entire, and only occluded at the anus, which will be readily ascertained by the meconium forming a dark-coloured tumour between the nates, the operation will be comparatively simple and easily performed, and in all probability it will prove successful; but when the rectum is deficient as well as malformed, the operation will be much more complicated and difficult; and it will even be questionable if it should be performed at all, as it will be exceedingly painful, and may neither improve the condition of the child nor prolong its life. When the rectum is deficient, it has been proposed that an artificial anus should be formed in the groin;¹ or Amussat's operation may be adopted.

As the operation belongs to the department of the surgeon, I shall not enter further on the discussion, but shall refer to an elaborate article on the subject by Mr T. Holmes.²

IMPERFORATED VAGINA.

This, like the last-named malformation, is one of rare occurrence, and it is seldom discovered until the age of puberty, when it becomes obvious by the suppression of the catamenia. The most common form of occlusion is the impervious state of the hymen, which is sometimes almost cartilaginous, and offers a strong opposition to the escape of the menses, which, being retained, in the course of time distends the abdomen, giving rise in some instances to the most prejudicial suspicions in regard to the patient's chastity; we should, therefore, be very cautious in expressing our opinion, which ought never to be given until after making a careful examination per vaginam. Mr Holmes³ points out the great importance of early ascertaining the existence of this occlusion, so that the operation for its removal should be performed before the age of puberty, as even the most trifling operation performed after that period is liable to be followed by fatal peritonitis.

Treatment.—The mode of operating in this kind of deformity will depend entirely on the character of the occlusion. If the occlusion is owing to the adhesion of the vulva, not only will it be discovered much earlier, but the necessity of an operation being performed immediately will be obvious, as the malformation may

¹ Forster, *op. cit.*, p. 320.

² *The Surgical Treatment of the Diseases of Infancy and Childhood*, p. 152.

³ Holmes, *op. cit.*, pp. 204-5.

interfere with the discharge of urine, and is therefore sooner discovered. Dr Merriman recommended the labia to be forcibly separated by means of the fingers without the aid of the scalpel.¹ This is a rude and unscientific mode of doing the operation, and ought not to be adopted. When the occlusion is occasioned by the hymen being entire, a trocar and canula may be used, by which the menses are allowed to flow off slowly; others recommend that the hymen should be laid open by a crucial incision. This operation is supposed to be more hazardous, from its allowing the womb to be too suddenly emptied, which is liable to produce peritonitis. When this operation is adopted, the lips of the wound should be kept open by means of a piece of lint steeped in oil.

IMPERFORATED URETHRA.

The urethra of the male is occasionally occluded by hardened mucus, which only requires a mild injection to remove it. On other occasions the urethra is occluded by a thin membrane, which requires the introduction of a sharp-pointed probe.² These are simple cases; but it sometimes happens, however, that more serious interruptions to the flow of the urine occur, such as entire absence of the urethra; or it may be deficient in length, terminating just before it reaches the glans, and opening either on the lower or upper surface of the penis, forming what is called hypospadias and epispadias.

Hypospadias.—This is a malformation which is more common than epispadias, and it varies in extent from a “slight incompleteness at the orifice to a total absence of the lower wall of the urethra.” It is sometimes hereditary, and Bellou relates a case which occurred at Agen, in which the urethra opened at the lower part of the perineum. This patient begot four children, two of which had the same kind of malformation. Frank mentions another instance in which the malformation was handed down to three generations,³ thus proving how erroneous the opinion is that this defect is always the cause of impotency. Dr Davis relates two cases in which he effected a cure. There is another case reported in the *London Medical Gazette*, in which a cure was effected by Dupuytren.

I have met with only one case; it was in a married man of independent circumstances. He suffered great distress from his urine not flowing freely, and his wife, a fine-looking young woman, was childless.

Epispadias.—This malformation is generally accompanied by deficiency of the walls of the abdomen; indeed, Casper states that

¹ Underwood, *op. cit.*, p. 589.

² On this subject read Sir A. Cooper's *Surgery*, and Dr Coley's work, p. 362.

³ Guy, p. 44; Beck, p. 122; *Lancet*, vol. ii. p. 771.

it almost never occurs alone.¹ It is much less common than hypospadias, in proof of which the commandant of the dépôt for the examination of the recruits observed only one case among 60,000 men who were inspected,² and Dr Baron³ states that he had met with 300 cases of hypospadias in the course of his practice, and only two of epispadias. It is considered quite incurable, and there is every reason to believe that it is always the cause of impotency.

EXTROVERSION OF THE BLADDER.

This is an exceedingly rare malformation in either sex, but more especially in the female. It is characterized by the anterior portion of the bladder and the parietes of the abdomen being absent. Except in the slighter forms of this defect, it is impossible to effect a cure.⁴

PHYMOSIS.

The contraction of the prepuce is sometimes so great that a probe can with difficulty be introduced into the urethra; in consequence, when the child passes water, it becomes distended like a bag. If this state is allowed to continue, a calculus may be formed within the prepuce, giving rise to symptoms similar to those of calculus in the bladder. There will be frequent desire to pass urine, with violent straining, and the little patient will press the penis with his fingers.

Treatment.—If the contraction of the prepuce cannot be overcome by gentle means, Mr Forster recommends that it should be seized by a pair of forceps and the contracted portion cut off, performing a sort of circumcision.⁵ Others advise the use of a director, which should be inserted between the prepuce and the glans penis, and to slit open the prepuce with a bistoury—care being taken not to insert the director into the urethra, an accident which took place in a case of Mr Forster's, and the urethra was laid open. It has been suggested by some authors that, previous to cutting open the prepuce, a ligature should be passed through it, so as to prevent the outer skin separating from the inner. It seldom happens that an operation is required in early life, and when the deformity occurs in advanced years, it may be overcome, in some instances, by injecting tepid water. I heard of a case some time ago which occurred in a gentleman advanced in life, and the country surgeon laid open the prepuce.

PARAPHYMOSIS.

Mr Forster⁶ does not admit that this malformation is congenital, but that in many instances it arises from a rough part of the child's clothing irritating the glans, in consequence of which it swells so

¹ *Op. cit.*, vol. iii. p. 251.

² Beck, *op. cit. et loci.*

³ *Op. cit.*, p. 193.

² Beck, 2d edition, p. 123.

⁴ Holmes, *op. cit.*, p. 144.

⁵ *Ibid.*

much that the prepuce cannot cover it. If proper care be not taken early, severe inflammation may come on and terminate in gangrene.¹

Treatment.—Cold should be applied to the glans, and gentle means should be used to draw the prepuce forward, while the glans is pressed back. Should this not be accomplished, then the constricted ring should be cut with a bistoury.

RETENTION OF THE TESTES.

One or both testes may be retained in the abdomen at birth, and afterwards form a tumour at the inguinal ring, having all the appearance of a hernia. It is therefore of great importance that a correct diagnosis should be made, for should a mistake be made by supposing that the testicle is a hernia, and an attempt be made to reduce it, and a truss applied, the most fatal inflammation might be induced.

Cause.—This may depend either on there being a stricture of the inguinal ring, or a want of power in the cremaster muscles.

Treatment.—The less interference in these cases the better for the child, for we can by no means hasten the descent of the testicle. All that should be done, therefore, is to protect it from injury, and nature will do the rest. I have reason to believe this is the correct mode of management, as it proved apparently quite successful in one patient I brought into the world, who grew up and went to India, married, and became a father.

HERNIA.

The most common forms of congenital hernia are the umbilical and the inguinal. The umbilical, or exomphalos, as it is called, consists generally of a protrusion of the omentum through the umbilical opening, which occurs most frequently in females. It is easily reduced, and retained by means of a pad and a bandage. The most suitable kind of pad is the half of a nutmeg, which nicely fills up the umbilical space, and is easily retained in its place by means of adhesive plaster cut in strips and applied in a crucial form, and then a bandage.

INGUINAL HERNIA.

This form of rupture takes place at the inguinal ring, in consequence of its not having contracted after the descent of the testicle. The bowel lies in front of the spermatic cord, and is in general easily reduced. It rarely happens, therefore, that strangulation occurs; but when it does take place it is attended with the same symptoms as in the adult, and requires the same treatment.

¹ Mr Forster, *op. cit.*, p. 192.

Part Second.

REVIEWS.

Traité d'Hygiène Publique et Privée. Par A. PROUST, Médecin de l'Hôpital Lariboisière. Avec 3 cartes coloriées et figures dans le texte. Pp. 840. Paris: G. Masson: 1877.

DR PROUST'S treatise on hygienics is an elaborate and valuable work. It skilfully embodies a vast amount of information derived from reliable sources, and gives an able exposition of the numerous subjects embraced in the author's *very comprehensive*, perhaps *too comprehensive*, programme. The great extent of the field of hygienics, the constant accumulation of new facts, and the frequent necessity imposed by advancing science of looking at old facts in new lights, must always expose a systematic treatise like that of Dr Proust to the criticisms and corrections of reviewers. To say, therefore, that the work before us is open to occasional corrective commentary is no disparagement of the author.

The work consists of fourteen sections, of which we subjoin the titles and a summary of the sub-titles, as the best way of giving a clear and short account of its principal contents.

I. ANTHROPOLOGY:—General anthropology; ethnogeny of France.

II. DEMOGRAPHY:—Statistics of population in relation to town and country, dwellings, religion, education, occupation, age, and sex; marriage, in relation to crime, insanity, duration of life, consanguinity, etc.; natality of France compared with that of other countries of Europe; mortality in its relation to age, sex, legitimacy or illegitimacy of birth, etc., etc.; relation of natality to mortality; armies, particularly that of France, in relation to recruiting, etc., etc.

III. MAN AS AN INDIVIDUAL:—Pathology and hygienics in relation to age and sex; diseases, peculiarities, and infirmities incident to particular professions and trades.

IV. AIR AND ITS IMPURITIES.

V. ALIMENTS AND ALIMENTATION:—Characters of an aliment; alimentary principles; aliments of mineral, vegetable, and animal origin; common aliments, viz., the solid, such as bread and meat, and the liquid, such as milk, alcohol, and tea; preparation and preservation of aliments; general rules of alimentation; digestibility of aliments; nutrition; animal heat.

VI. WATER:—Potable waters; impure waters, and the pathological effects which they produce; preservation and distribution of drinking water.

VII. DRESS.

VIII. BATHS:—Public baths, etc.

IX. GYMNASTICS.

X. PRIVATE DWELLINGS, PUBLIC BUILDINGS, HOSPITALS, AND MATERNITIES:—Ventilation, lighting, and warming; privies.

XI. HYGIENICS OF TOWNS AND COUNTRY PLACES:—Sewers; roads; burial of the dead.

XII. CLIMATOLOGY: GEOGRAPHICAL DISTRIBUTION OF DISEASES: ACCLIMATION:—Different elements which enter into the constitution of climates, such as temperature, humidity, altitude, etc., etc.; division and characters of climates; influence of climate on wounds and surgical operations.

XIII. VIRULENT AND MIASMATIC DISEASES—THEIR ETIOLOGY AND PROPHYLAXIS:—General considerations on infectious and contagious diseases; diseases of marshes; epidemic dysentery; typhic diseases; typhoid fever; typhus, exanthematous and petechial; relapsing fever [*typhus à rechute*]; cerebro-spinal meningitis; eruptive fevers, small-pox inoculation, vaccination, revaccination, vaccinal syphilis, measles, scarlatina; diphtheria; zoonotic diseases, such as hydrophobia and glanders; trichinosis; scurvy.

XIV. INTERNATIONAL HYGIENICS:—Cholera; yellow fever; plague; conclusions adopted by the Vienna International Sanitary Conference, drawn up by a committee consisting of D'Alber Glan-statten of Austria, Van Cappelle of Holland, and A. Proust of France.

Although the scope of Dr Proust's book is not limited to any one nation, it has, and is intended to have, a much more special bearing upon the people of France than upon the inhabitants of any other country. This feature is very apparent in several parts of the treatise, and this is sometimes pointed out by the titles of the chapters—as, for example, by that which treats of the ethnogeny of France.

The author, after some general anthropological considerations, makes the following remarks on the ethnogeny of the French people. They will serve to show the point of view from which he regards a large part of his subject:—

“We must now leave generalities and grapple more closely with the subject, studying on a narrower field the ethnological questions which, as yet, I have contemplated only in their higher aspects. If, with this object in view, I require to select a particular country, there can be no doubt as to the choice I ought to make. I write in France; and on French soil I desire to imbibe the elements of study from this standpoint in a manner more detailed than has yet been attempted by any author on hygienics. I wish to examine ethnologically, in relation to private and public hygienics, the composition of the French population, their physical characters, their different aptitudes, and the vital powers of each of the component races separately considered, so that I may afterwards combine in

one picture the results of the analyses, and formulate the practical conclusions to which they lead in respect to legislation, administration, and medicine.

"It is only within the last few years that the science of ethnology has been studied with exactitude in France, where, in a certain sense, it may be said that it has been created by the *Société d'Anthropologie* (founded in 1859); and yet, already, hygienics owe it important services. Thus, for example, it has been observed that there are very few myopic and phthisical persons in the Armorican peninsula [Brittany]¹, and that they are numerous in old Provence. Scrofula is very common in the six departments of the Rhône, the Loire, the Haute-Loire, the Cantal, the Lozère, and the Aveyron, and is seldom met with among the inhabitants of the Mediterranean coast. It has been shown that the people of Lorraine are particularly subject to calculous affections. It has also been shown that there are great inequalities in the mortality of the provinces which are neighbouring, but the population of which is of different races. Bertillon, basing his calculations on the statistics of a period of ten years, states that the average duration of life is thirty years in Brittany and fifty in Normandy. The relative fecundity of localities likewise varies much according to the ethnic origin of the people. The Scandinavians and Germans, who colonised many districts of France, seem to have made themselves remarkable for generative aptitude.

"Few countries have attained to that degree of unity and homogeneity which is now presented by France. Nevertheless, the French nation is of most diverse origin. Among the numerous ethnical elements, which were at one time separated and then became united to constitute our nation, all authors—Cæsar, Pliny, etc.—agree in particularly distinguishing three distinct races inhabiting Gaul, each having one origin and one language, and its own laws and institutions: the Celtic race, which extended from the Garonne to the Seine and the Marne, and from the Ocean to the Alps—the Aquitanians settled between the Pyrenees and the Garonne—and the Belgians (or Iberians) occupying the region situated between the Seine, the Marne, and the Scheldt. At the present day, to ascertain the anthropological character of these races, and the ethnic type to which they seem to belong, we must, in turn, consult the data furnished by the remains of human bones, by historical documents, and by direct observation of the existing populations."

The author examines the peculiarities of race in respect to growth, physiological development, and pathological tendencies.

¹ ARMORICA is a word of Celtic etymology, being derived from *ar* [on or near] and *mor* [the sea]. The inhabitants of the coast between the Seine and the Loire were known to Cæsar as the *Armorici*. Afterwards, the name Armorica was limited in its application to the peninsula of Brittany, where, at present, a large part of the population still speak only a Celtic dialect, and do not understand French.

To show the manner in which he treats this fundamental part of his subject we quote two passages, the first referring to the Germanic race of the north-eastern departments, and the other to the Jews, unequally scattered over the whole of France.

The following passage may or may not have been written before Alsace was wrenched from France:—

“According to statistical documents collected by Devot, Sistach, and Boudin, and the ethnological researches of Broca, our north-eastern departments, corresponding to ancient Belgian Gaul, present much fewer examples of deficiency in stature than the departments of central France and of Brittany. In the German race, growth continues considerably beyond the twentieth year; the inhabitants of Belgium, according to Quételet, continue to grow in stature till beyond the age of twenty-seven—from 1 m. 675 at twenty-five years, the average height of a man will have increased at thirty years to 1 m. 684. In the Duchy of Baden, according to Champouillon, most of the conscripts of 1838 then exempted on account of deficiency of stature, when remeasured in 1840, were found to be decidedly taller. In Austria, likewise, Lihartzik has shown that growth in stature continues up to the age of twenty-five. In Alsace puberty is tardy, as is everywhere the case with the German race. From statistical documents relating to the age of the first menstruation, it appears that in 1941 fair-complexioned girls observed by Louis Meyer of Berlin, 137 girls of Gottingen observed by Osiander, 3840 girls of Copenhagen observed by Rawn and Leog, 1249 Alsacians observed by Stolz and Lewy, the approximate mean age at which puberty commenced was not under sixteen. This peculiarity explains why the law of Saxony does not allow women to marry under eighteen, and men not before they have attained twenty-one. According to Martin and Folley, there is a higher rate of mortality among the French of Algeria who have come from our northern departments than among those from the southern, where the inhabitants are chiefly of Iberian origin. Bertillon has also insisted upon the high death-rate and the low birth-rate of the Germans who have settled in our African colony; and has stated that for 1000 persons of Spanish extraction there were 46 births to 30 deaths, whereas 1000 persons of German origin gave only 31 births to 56 deaths.

“Rouis and Laveran have shown that the Algèrian population derived from the north of France are predisposed to abscess of the liver twice as much as those derived from the south. De Sémallé has proved that our soldiers from the north-eastern departments are much more subject to cerebral affections from imprisonment than those from the other departments.

“If,” says Lagneau, “these facts be taken into account, if we bear in mind that in India the English (partly a Germanic race) have a high rate of mortality, and do not reproduce themselves beyond two generations (according to Boudin, Wise, Davis, and

Broca), we are led to adopt Beddoe's opinion, that now, as in the times of Tacitus and Livy, the descendants of the Germans and the Gauls are exceedingly tried by high temperatures, and are consequently unsuited to acclimatisation in hot countries."

The following short account of the French Jews is interesting, in relation to their varieties and admixtures, and the influence of race upon the natality, mortality, and health of communities.

"The Jews are very unequally distributed in France: there is not one in the departments of Lot and Mayenne, while they are numerous in the departments of the Seine, the Gironde, the Bouches-du-Rhône in Old Lorraine, and particularly numerous in Old Alsace. In the department of the Bas-Rhin there are 20,935. They are generally remarkable from their dark hair and beard; from their long eye-lashes; from their thick, prominent, and arched eye-brows; from their large, lively, deep-set eyes; from their dusky complexions; from having the nose very aquiline and narrow at the base; and from having the cheek-bones hollowed out above and arched below. Nevertheless, in our eastern provinces there are many fair and ruddy Israelites presenting totally different anthropological characteristics, who are generally designated *German Jews*. This type is apparently the result of the crossing of the ancient Jews with the German and Slave races. Some of them, however, seem to be simply the remains of the Germans and Slaves who adopted Judaism about the ninth century. Among the Jews of the south of France—called also Portuguese Jews—there are no persons of fair complexion. Some of the Jews of ancient Judea were certainly fair; and tradition represents Jesus Christ as a fair man. The Jews of Algeria have a mortality not only relatively lower than that of Europeans, but also than that of the Arabs and the Moors. In Germany it has been observed that the Jewish population has greatly increased, and that this increase does not depend upon the number of births being greater, but on there being a lower death-rate."

The author says a few words about the colonies of gypsies [*Bohémiens*] met with in southern France, particularly in the neighbourhood of Nismes and Perpignan; he also briefly notices the old Ligurian and Iberian races of Corsica, and the aboriginal and recently-imported races of French Algeria. He says nothing of the populations of other French colonies, remarking that an attempt to describe them would lead him far beyond the prescribed limits of his work.

Of the Franks—the people who gave their name to France—the author says:—

"The Franks were not one people, but a confederation of many tribes [*Sicambres, Salicns, Bructères, Teutères, Usipètes*, etc.] They presented the usual characteristics of the German races. To be more precise, let me recall these characteristics, which were dis-

covered in exploring different tombs of the Merovingian era.¹ The Franks had an elongated head, being moderately dolichocephalous, with an index of $\frac{76.6}{100}$ (Broca)—the face was long and oval—the hair was light in colour—and, generally, the stature was tall. In Austrasia, where the Franks settled in great numbers, the German type predominated more than in Neustria.² Though the Franks were not relatively numerous, they have exercised an immense influence from the very fact of their having been conquerors: their descendants constituted a large proportion of the military aristocracy of the Middle Ages; and their type is still to be found in many families, and even in many Frenchmen who bear no historic name, and make no pretension to be the descendants of a noble stock.”

It appears, then, that the French population of the present day is composed fundamentally of three races, and that it also contains contributions in various degrees from many other stocks. The localities in which particular races preponderate in the existing population present peculiarities in respect to natality, mortality, and type of disease, apart from those depending upon local influences of climate, geological formation, altitude, and water-supply. In modern researches into the topographical distribution of disease, due importance is not given to the influence of race. This is not remarkable; for it is an influence till recently very little studied, and which is often difficult to detect and trace. It is, moreover, an influence rapidly becoming more and more occult as communities and nations become more and more consolidated. Races capable of fusion, especially when placed together in proximity within the same nationality, are every day becoming more and more blended under the operation of community of interests, increased means of inter-communication, and from the old dialects of race, necessarily of only a restricted and local value, steadily giving place to one general and national language. This change is proceeding rapidly in Great Britain and France. As it progresses, the physiological and pathological peculiarities of the different races embraced within the respective national limits of Great Britain and France become more and more difficult of detection. The entire blending of race is not, however, likely to be completed for many generations in Great Britain or in France; and even when it does come, there will still probably be constantly presenting themselves certain forms in individuals and families, truly typical of a forgotten race, and of its physiological and pathological peculiarities.

¹ The Merovingian was the first dynasty of Frankish kings in Gaul.

² *Austrasia*, or East Frank-land, embraced Lorraine, Belgium, and the right bank of the Rhine: its central point was Metz. *Neustria*, or West Frank-land, extended originally from the mouth of the Scheldt to the Loire: it was bounded by Aquitania on the south, and by Austrasia and Burgundy on the east. Its principal cities were Paris, Soissons, Orleans, and Tours. Soon after 912, when the territory afterwards called Normandy was ceded to the Normans, the name Neustria fell into disuse.

Dr Proust has done good service to medical science by bringing this vast subject to the front. It has not only important bearings upon the solution of general problems in relation to marriages and to the heredity of health and of particular diseases, but also important bearings upon the every-day duty of practitioners, particularly of those who, from being settled in cosmopolitan centres, are consulted by clients of different races, in whom disease presents corresponding diversities.

The influence of race in modifying the characteristic phenomena of diseases requires to be taken into account when considering the question now being discussed by our countrymen in India in respect to the lately existing famine, and the co-existence with it of a particular kind of fever. Is or is not the fever which has been—and believe perhaps, still is—scourging Bombay and Madras, the “relapsing” or “famine” fever of Great Britain, Ireland, and other countries? When Dr Charles Murchison first published his “Treatise on the Continued Fevers of Great Britain,” he believed that “relapsing fever” had never been seen in India; but in his second edition, issued in 1873, writing with maturer knowledge, he said that, “contrary to the opinion expressed by Morehead, and in the first edition of this work, it must be admitted that relapsing fever occurs in India and other tropical countries” (p. 320). This fact was elaborately demonstrated by Dr R. T. Lyons, of the Bengal army, in 1872, in his *Treatise on Relapsing or Famine Fever*. In his preface Dr Lyons says:—“Whatever differences there may be between the fevers in Europe and in India, they are unimportant, and do not involve a dissimilarity in their nature or cause. Equivalent differences exist in the human race in this country and in Europe. The people are olive, black, or dark-complexioned in this country, and the women attain maturity early in life; and some other differences might be mentioned; but these peculiarities have never been regarded by naturalists as constituting an essential difference between the people of India and of Europe. Relapsing fever has long been recognised in this country (India) as a distinct disease, and various designations have been applied to it, such as jungle fever, bilious remittent fever, and other names. The chief error regarding it has been the ascription of its origin to malaria, or some subtle but unknown deleterious aerial agent. In this work it is shown that the want of food is the origin of the disease, and that it is propagated by contagion.” While we unhesitatingly admit that Dr Lyons has established his proposition, we concur with Dr Murchison “that in many of the epidemics to the records of which he (Dr Lyons) appeals, the diagnosis of relapsing fever is based upon very meagre and unsatisfactory data,” and “in some there is positive proof that the disease was not relapsing fever” (Murchison, ed. 1873, p. 320).

Recently issued official documents, now before us, show that a difference of opinion exists in the profession in India as to the

correctness of the view expressed in the above quotations from the works of Lyons and Murchison.

Some British and Irish epidemics of relapsing fever, of which good descriptions have been placed on record, were unquestionably similar in the circumstances in which they occurred, as well as in their symptoms, course, and pathology, to the fever which prevailed this year in Bombay and Madras. Differences of race, of climate, and of geological formation, no doubt, contribute to mask from superficial and prejudiced observers the identity of the fever as seen in Europe and in India, and probably account for the diversity of opinion recently expressed by medical inquirers in India placed under equally favourable conditions for observation.

At a meeting of the Municipal Corporation of Bombay, held on Wednesday, 4th April 1877, one of its members, Mr Thomas Blaney, a medical practitioner, stated that the disease which afflicted the persons resident in the relief-camp in the flats was "not the ordinary remittent fever, but a relapsing fever, a contagious epidemic disease" (*Bombay Gazette of 5th April 1877*). In consequence of this statement, Government requested Acting-Surgeon-General Dr W. G. Hunter to institute an inquiry, which he did, appointing as his coadjutors Surgeon-Major Cook, M.D., first physician to the Jamsetjee Jeejeebhoy Hospital, and Surgeon-Major Carter, M.D., surgeon to the Gokuldass Tejpal Hospital. We have before us the report of Drs Cook and Carter, and Dr Hunter's minute thereon. The latter denies the accuracy of the statement made to the Municipal Corporation by Mr Thomas Blaney. The denial, based on the report of Drs Cook and Carter, is thus expressed: "The above report goes to show—1st, That the contagious relapsing fever of Europe has had no existence in Bombay; and, 2d, That the fever is of a remittent character, has its origin in malaria, and is consequently not contagious."

Mr Blaney had the last word. He submitted, in reply to Dr Hunter's report, an elaborate minute to the Public Works Department of Bombay, in the course of which he thus explains and well defends his original statement. Mr Blaney says:—"It happened during my daily visits to the hospital at this time, that many of the people in the hospital who were previously well became suddenly attacked with fever in my presence; some of these were persons who said they had never before suffered from fever; and a great number were persons who said they had previously suffered from fever in the town, and after being well for five or six days, were again attacked. And there were a few who said they had been twice before attacked, and were attacked in the hospital for the third time. In reviewing the medical history of the sick in the hospital as a whole, I found that, after inquiry into the history of about 200 cases of fever, the majority—a very large majority—made the same statement in regard to themselves, or it was made for them by their friends, namely, that they were in actual employment as labourers

in Bombay, chiefly as coal-labourers, when they were suddenly prostrated by fever, which, after continuing for five, six, or more days, suddenly subsided, leaving them quite well. I weighed this evidence carefully, and made due allowance for the ignorance manifested by the labouring classes when referring to periods of time; but after eliminating all the evidence that might be fairly regarded as untrustworthy, there was sufficient in the general statements of the people, sufficient in their complete accordance as to the main features of the fever, to entitle them to some amount of credit. The facts elicited by my clinical observations, and of which I made notes, and other facts which daily passed before me, but of which I had not time to take notes, went far to confirm the statements of the patients and their friends with regard to their previous medical history. Certainly I would have hesitated to give this or any other fever a name on the unsupported statements of the people; but before I named the fever at the Corporation meeting, I had observed its sudden subsidence with a sweating crisis, often accompanied with diarrhœa, and sometimes with hæmorrhage, often with collapse. I had observed thirty or forty such cases. I had seen a great number of people who came to the hospital well, and who were there seized with fever. I had observed and noted the prominent and characteristic symptoms of a fever described by modern European writers as relapsing fever, and that the fever before me was that fever, and that the symptoms bore no resemblance to any other form of fever of which I had experience or of which I had read; and that no special drug treatment was of avail in cutting short the fever, or terminating it in any other way than that of a sudden sweating crisis. Finally, there was no decided remission of the fever in any of the cases, as is usually seen in Indian remittent fevers; there was no spotting of the skin either in isolated spots or a more general eruption, except in two cases, in which the fever terminated in malaria; there was a very great absence of inflammatory or other organic complications, and a remarkable tendency to a spontaneous subsidence on a particular day of the fever; while the period of that subsidence could be pronounced with certainty at least twelve hours before the temperature of the surface began to diminish. I might add, that the mortality, though higher than it usually is in Europe in relapsing fever, was considerably below what obtains in Indian remittent fevers.

"This was the evidence before me on the 5th of April, the day on which I named the fever before the Municipal Corporation; and for two or three days before I was firmly persuaded in my own mind that I was in the presence of an epidemic of relapsing fever."

Although Dr Hunter's expressions seem to imply that Drs Cook and Carter entirely support the view that "the contagious relapsing fever has had no existence in Bombay," this is not a fair inference from these reports. These gentlemen report that twelve, or about

one-fourth of the forty-nine cases clinically examined, "were of the relapsing type, while there were rather fewer of ordinary malarious character." The recognition of twelve typical cases of relapsing fever in forty-nine cases of fever submitted to a clinical scrutiny completely justifies the statement of Mr Thomas Blaney. For consideration, however, of the report in a contrary sense made to the Government, the question cannot be looked on as finally settled. We have not space to enter more in detail into this interesting and important discussion. Those who desire to do so, we refer to the official documents from which we have quoted. They appear *in extenso* in the *Times of India* published at Bombay on 7th September 1877, where also will be found a temperate yet crushing editorial criticism of the views officially set forth by Acting Surgeon-General Dr W. G. Hunter.

Relapsing fever is treated by Dr Proust with that appropriate brevity demanded by the scope of his work. He might, however, at the cost of a very little more space, have usefully referred to various sources of information on the subject which he does not name. His descriptive statements are sometimes inaccurate—the inaccuracies apparently originating in the necessity for condensation and in the general application of statements applicable only to particular epidemics. For example, as generally applicable to relapsing fever, it is decidedly misleading to say that "the essential anatomical lesions are very great and rapid tumefaction of the spleen, which is often the seat of infarctus, and even of suppuration, having its seat in the Malpighian follicles; the liver is also congested; Peyer's patches are healthy; but, in general, the mesenteric glands are infiltrated."

From a hygienical point of view, Dr Proust thus expresses himself regarding this form of fever:—

"Relapsing fever has the same prophylactic indications as typhus; it is unnecessary, therefore, to dwell upon them. In central and western Europe the disease is generally imported, its sources being apparently limited to the British Isles and the southern basin of the Baltic Sea. From the relatively moderate severity of the disease, it does not necessitate the same prophylactic solicitude as typhus; nor, notwithstanding its very contagious character, the rigorous measures required by cholera. My principal reasons for insisting upon its history are its being a famine-caused disease, and its possible importation into countries where, as in France, it has hitherto been nearly unknown" (p. 749).

Dr Proust says:—"In Scotland and Ireland typhus reigns in permanence; but relapsing fever, on the contrary, only appears from time to time, and in the intervals is absent." The incompleteness of this statement renders it inaccurate, or at least misleading. In Scotland and Ireland typhus never was permanently installed, except in the crowded slums of certain large towns, and in a few rural localities where ventilation and drainage were ex-

ceptionally bad. The opprobrium of permanent installation is no longer applicable to Edinburgh; and is elsewhere ceasing to be justifiable in Scotland, thanks to the progress of practical sanitary science. In reviewing Sammé on Diphtheria in April last, we took occasion to refer to the past and the present in respect to fever in Edinburgh. We said, p. 920:—"In the Old Town of Edinburgh, less than forty years ago, when Edinburgh was not the great centre of railways which it now is, typhus was endemic; and it, as well as other fevers, were then epidemic at short intervals. These fevers seldom showed themselves, and never took root in the New Town, which, from its open straight streets and exposed situation, was constantly being swept by the high winds for which our city is famous, but which could not sweep through the fever-dens of the Old Town—the narrow lanes ('closes') inhabited by a poor population, crowded into gigantic houses ('lands') of from ten to fourteen stories, into which air and light only found indirect and very imperfect admission. By well-directed improvements, carried out by the municipality, the fever-dens have been demolished, and wind as well as air and light in abundance have been freely admitted to the Old Town, with a very striking diminution in the ordinary average of fever cases, and the non-occurrence of a fever epidemic for many years."

It is important to remark that the places in the Old Town of Edinburgh, appropriately called fever-dens, were always found to be the favourite breeding-beds alike of typhus, relapsing fever, and cholera, showing clearly that the same unsanitary conditions determined the headquarters of epidemics of specifically different diseases. This fact is in harmony with a similar fact regarding the localities in Bombay which have been most scourged by the "famine fever" of 1877. This fever has shown itself with greatest severity in the same filthy districts of the city where remittent fever is endemic, and where in some seasons it prevails as an epidemic. But we fail to see why the epidemic of 1877 should be ascribed to "malaria"—whatever that term may mean—simply because it has chiefly scourged a filthy city where remittent fever is endemic. If the argument be admissible in respect to Bombay in 1877, it was of equally legitimate application in respect to the fever-dens of Edinburgh and the epidemic of 1843-44.

Relapsing or famine fever was first studied as a fever specifically distinct from typhus, in Edinburgh in 1843, in the haunts of typhus. It appeared in these haunts, together with crowds of ill-fed Irish reapers. The invasion of the fever and of the reapers was simultaneous. Relapsing fever invaded the city of Bombay together with the crowds of famine-stricken immigrants. In his official document now before us, the Acting Surgeon-General shows that 13,700 fever deaths were registered in Bombay between the 1st January and the 22d of May last—and of these 13,700 deaths the immigrant population furnished 8509. Famine and overcrowding, therefore, coexisted

with the fever. The Edinburgh fever of 1843 and the Bombay fever of 1877 were, we believe, in their cause, symptoms, and course, *essentially* the same—both being epidemics of that specific form of fever which is now generally named “relapsing.” We do not know the number of cases which occurred in Bombay between the 1st of January and the 22d of May last; but if 13,700 died, the number of attacks must have been enormous.

We must now pass on to other topics. Before doing so we invite attention to the fever-controversy now going on in India, regretting, at the same time, that from the pressure of many subjects on our space we cannot go more fully into it on the present occasion.

(*To be continued.*)

Excision of the Lower End of the Rectum in Cases of Cancer. By JOHN B. ROBERTS, M.D. Philadelphia: Sherman & Co.: 1877.

AFTER glancing at the history of the operation, the author gives in detail an account of several cases in which the operation was successful. In one case operated on by Dr Levis the procedure is thus described:—“After a large metallic bougie had been introduced into the bladder, to serve as a guide to the position of and to steady the urethra, an incision was made from the base of the scrotum to the coccyx encircling both sides of the anal aperture. The cancerous gut was carefully dissected—a section of the rectum three inches in length was excised.” A table of 33 cases collected from various sources by Dr Schmidt of Leipzig is given, among which 20 were cured, 2 improved, 8 died, 1 had return of disease, and 2 were doubtful. In America, Bushe, Mott, March, Briddon, and Levis, who have ventured to perform the operation of extirpation of the rectum, have had only one death in seven cases.

The free incisions through the skin around the anus admit of easy dissection of the cancerous mass, and the application of ligatures to bleeding vessels as they are cut. This pamphlet is a useful addition to the literature of the subject.

On the Functional Diseases of the Urinary and Reproductive Organs. By D. CAMPBELL BLACK, M.D., L.R.C.S. Ed. Second Edition, Revised. London: J. and A. Churchill: 1875.

THE first edition of this work was favourably noticed in the November number of this Journal for 1872.

In the preface to the present edition the author hopes to “succeed in elevating the literature of the subjects herein treated, from the mire in which it has been permitted too long to remain.” We

wish him every success in his efforts; but would only suggest that in any future writings on this subject he would take as an example Sir James Paget's Clinical Lecture on Sexual Hypochondriasis, than which no better type exists of the way to treat a rather delicate subject elegantly, yet scientifically.

There is a great amount of information in the book, somewhat badly arranged, the quotations are too numerous and lengthy, and the style of writing is too florid and popular for our taste.

Ophthalmic and Otic Memoranda. By D. B. ST JOHN ROOSA, M.D., Professor of Ophthalmology and Otology in the University of the City of New York, Surgeon to the Manhattan Eye and Ear Hospital; and EDWARD T. ELY, M.D., Assistant to the Chair of Ophthalmology and Otology, University of the City of New York; Attending Surgeon to the Class of Eye and Ear Diseases, Eastern Dispensary. New York: William Wood & Co.: 1876.

THIS little book, presented to students and practitioners of medicine, has been prepared with great care. Its aims, to give a concise and correct outline of our present knowledge of ophthalmology and otology, and to serve as a kind of dictionary of these subjects, are carried out with great success. It is clearly not intended that it should be used to acquire a primary knowledge of these sciences, or to be trusted for complete directions as to the diagnosis and treatment of ophthalmic and aural diseases. The anatomical portions, however, will be found more complete than in any one book in the English language, as a systematic grouping of what could only be found by consulting several works in English, German, and French has been made. We believe the book will be highly useful to the experienced general practitioner, and the specialist will find it a trustworthy aid to the memory in recalling facts which sometimes escape the minds of the most learned.

In endeavouring to make the book as small as possible, our authors have made the text very concise; but there has been no sacrifice of clearness made on that account. The treatment recommended is sound. Points which are still unsettled we have indicated by marks of interrogation. The derivations of nearly all technical terms are given with the words themselves as they occur in the text, and, besides, an alphabetical list of them has been placed at the end of the book. Again, we have here a mark of interrogation if the derivation is doubtful. Whenever the name of a person prominent in ophthalmology or otology occurs, it is followed by his country and century in brackets. A bibliography gives the titles of the works consulted in the preparation of the work. We give the following passages in confirmation of what has been said above:—

"ORBITS: bony cavities in which the eyeballs are securely contained. . . . Each orbit formed from seven bones. . . . INNER WALL by superior maxillary, ethmoid, sphenoid, and lachrymal bones; very thin $\frac{1}{2}$ " [here a failure of the type]—" $\frac{1}{4}$ in.; anteriorly has *lachrymal groove* (for lachrymal sac) bounded in front and behind by *anterior* and *posterior lachrymal crests*." "Tumours of conjunctiva *Pinguecula*. [Lat. *pinguis*, fat.] Small, yellowish tumour, of fatty appearance, situated near corneal margin, and chiefly seen in old people. Consists of hypertrophied conjunctiva and epithelium. Harmless. May be excised if desired."

"EXTERNAL EAR: *Auricle* [Lat. *auris*, ear] or *pinna* [Lat. *pinna*, a mussel] is external funnel-shaped appendage fastened to malar and temporal bones by elastic fibres. Has fibro-cartilaginous framework closely covered by perichondrium and skin. Latter forms projection from lower end of cartilage called *lobe* of ear. Outer edge of auricle called *helix* [Gr. *ἐλίσσω*, to twist]. Within helix is *fossa navicularis* [Lat. *navicula*, small boat]. At inner edge of this is another ridge, the *anti-helix*. In front of opening of auditory canal is projection called the *tragus* [Gr. *τράγος*, goat; because hairs like goat's beard usually grow here?] Opposite this on other side of canal is similar projection, the *antitragus*. Concavity around orifice of canal called the *concha* [Gr. *κόγχη*, concave shell]; above this is triangular depression, the *fossa triangularis*. Skin of auricle covered by downy hairs, and contains sebaceous glands (largest in concha), and sweat glands (chiefly on side next skull)."

"MYRINGITIS [Lat. *myringa*], or INFLAMMATION OF DRUMHEAD, is only part of an inflammation of adjacent parts. The anatomical structure of a membrane which has no independent nutrition, which has but one layer of tissue peculiar to itself (and that in its centre), but which is a direct continuation of neighbouring parts, rather precludes the idea of its being primarily diseased."

In the glossary we find "Myringitis, Lat. *myringa*, the drum-head; and *itis*, denoting inflammation, p. 213."

We believe this book will prove especially useful to those who are attending lectures upon the subjects of which it treats, but who are too busy during the lecture season to consult the larger treatises.

Our Medical Charities: An Address delivered at the Annual Meeting of the Birmingham and Midland Counties' Branch of the British Medical Association. By SAMPSON GAMGEE, F.R.S. Edin. London: J. & A. Churchill: 1877.

VERY sensible opinions are expressed in this address, by Mr Sampson Gamgee, on the vast amount of evil caused by the present system of indiscriminate administration of medical charity.

In the Borough of Birmingham, in 1867, one person in every

five obtained relief from the medical charities; whereas, the proportion rose in 1876 to 1 in 3.5. "Such a state of things suggests a fraud,—*Firstly*, On the benevolent who furnish funds for the support of medical charities, in the confident belief that their ministrations are confined to worthy recipients; *Secondly*, On the members of our profession who give their services to hospitals without payment; and, *Thirdly*, Upon the great body of medical and surgical practitioners who are prepared to render their services on equitable terms of remuneration, according to the position in life and the means of those who seek their aid."

The remedy for such a state of matters may be stated in the proposition of Sir William Gull at the Conference of the Society of Arts, which was seconded by Mr Prescott Hewett, and carried unanimously, "That the improvement of the people of London in health and habits of thrift and independence demands that while, on the one hand, out-patient departments should be regulated so as to secure the prompt treatment of cases requiring the special resources of a hospital; on the other, free dispensaries should be converted into provident dispensaries, and new provident dispensaries should be established in proportion to the wants of the population."

"Such recommendations only require to be rightly placed before the provident working-men to secure their sympathy and co-operation."

Tables of Materia Medica: A Companion to the Materia Medica Museum. By T. LAUDER BRUNTON, M.D., F.R.S., etc.; Lecturer on Materia Medica at St Bartholomew's Hospital, etc. London: Smith, Elder, & Co.: 1877.

THIS is a work by one well known as an original investigator and an able writer on Materia Medica. Dr Brunton in his introduction tells us that the object of these Tables is twofold. "They are intended, *firstly*, to recall to the student's mind what he has learned from larger text-books; and, *secondly*, to help him to arrange the material he has acquired in a convenient order." To a great extent he has succeeded in accomplishing both of these objects. The tables are well arranged, and the information conveyed is generally succinct and accurate. The information is given in 12 parallel columns: *1st*, name of substance; *2d*, its source; *3d*, its preparation; *4th*, its properties; *5th* and *6th*, its reactions, generic and specific; *7th*, its impurities; *8th*, its source of impurity; *9th*, its tests; *10th*, its action; *11th*, its use; and *12th*, its dose. Dr Brunton begins with the inorganic substances, passes on to the vegetable Materia Medica, and ends with the animal substances. Several authors have published tables of Materia Medica, all more or less valuable, but this work of Dr Brunton is the largest and most complete work

on the subject. It is, however, questionable if the extra size of the book, not to speak of the extra price, as compared with other works on the same subject, will not to a great extent prevent its ever becoming popular. The author tells us that the student is supposed to use the Tables in the Materia Medica museum. Unfortunately, few medical schools possess a museum so complete and so available for the purposes of tuition as Dr Brunton here supposes, although it would be most desirable that every school of medicine should possess such a museum. With such a museum, and Dr Brunton's Tables, the student would be in a position "to recall to mind what he has learned from larger text-books, and to arrange the material he has acquired in a convenient order."

So far we must praise Dr Brunton's work very highly; we are sorry, however, to say that we cannot congratulate the author when he goes on still further to indicate the *importance* of the various drugs. "The importance of the various drugs is indicated by the type in which their names are printed, whilst the most important preparations are marked with two asterisks, the less important with one." The author recognizes, in regard to drugs, *four* degrees of importance; and in regard to the preparations, *three* degrees of importance. We admit frankly that this is a most difficult part of the subject, and we must bear in mind that the members of the profession differ widely in opinion in regard to the comparative value of certain drugs and their preparations. But making all allowances for such differences of opinion, we must say that many of the statements are not what we would have expected to find in Dr Brunton's book. For example, at page 68 we find "*syrupus papaveris*" marked as one of the "*most important*" preparations, whilst "*tinctura camphoræ co.*" is marked as a "*less important*" one. At page 42 we find "*vinum ferri*" marked with an asterisk, a preparation that contains very little iron, and is of use chiefly for the sherry which it contains, and that not always the best. It is one of the weakest of all the iron preparations. At page 82 we find "*syrupus aurantii floris*" marked as a "*most important*" preparation, a substance whose only use is for flavouring purposes. We suspect also that many will question the propriety of classing "*extractum physostigmatis*" along with the *most important* substances. The most glaring mistake in regard to the importance of the preparations which we noticed, is in marking "*aqua laurocerasi*" with an asterisk. This is a preparation which ought to be expunged from our pharmacopœias altogether, inasmuch as it is valuable only for the hydrocyanic acid it contains, which is never much, and, what is worse, very uncertain.

Again, we find at page 24 "*pulv. cretæ aromaticus cum opio*" regarded as a "*less important*" preparation, whereas at page 72 it is spoken of as a most important one. So too with "*pil. plumbi cum opio*;" at pages 40 and 72 we find it in the former place without an asterisk at all, but in the latter place it has two asterisks prefixed to it.

At page 128 the author falls into the common mistake of supposing that the leaves of the "*red whortle-berry*" and those of *Arctostaphylos Uva Ursi* may be distinguished by the leaves of the latter having their margins entire. The leaves of both these plants have their margins entire. The leaves of the *Arctostaphylos alpina* are serrated on the margin, and the entire margin of the leaves distinguishes between the leaves of the two species.

In any future edition, we would recommend Dr Brunton either to omit giving the relative importance of the various substances, or thoroughly to revise it.

Notwithstanding these drawbacks, this work forms a valuable addition to the literature of *Materia Medica*, and we hope to see soon the *Text-book* which the author promises to issue shortly.

St George's Hospital Reports. Edited by WILLIAM HOWSHIP DICKINSON, M.D., F.R.C.P.; and TIMOTHY HOLMES, F.R.C.S. London: J. and A. Churchill: 1877.

THERE are some valuable papers in this volume, besides the usual comprehensive reports of medical, surgical, and obstetrical practice, which furnish, along with those of previous years, commencing with 1865, an important and reliable fund of material for statistical conclusions. The preface contains graceful and interesting tributes to the memory of two eminent St George's men, the late Dr Robert Lee and Dr Sibson. It would appear that the editors have not hitherto adopted the practice observed in some other series of hospital reports—for example, *St Bartholomew's* and *St Thomas's*—of inserting commemorative notices of eminent men connected with the school; but we do not see any good reason for this peculiarity. A well-written memoir, however brief, such as that of Dr Latham by his lifelong friend Sir Thomas Watson, must always be pleasing to former friends, and useful to a new generation of pupils.

Our limited space prevents us from entering into details; but a few remarks on a paper entitled "*Cases of Menière's Disease*," by Dr T. C. Allbutt, may be offered. He had met with eighteen cases in two years, showing that the disease is by no means uncommon. "The chief symptoms are vertigo, vomiting, a reeling gait, and noises in one or both ears; the ear or ears being also affected with deafness as to skull vibrations, and generally also to aerial vibrations. These noises are for the most part described as *roaring*, though they may be of other kinds." "It is not dangerous to life, not even indirectly so, by extension of inflammation or by complication; but, as a rule, it is of long duration, and may embitter a great part of life." The symptoms naturally cause great alarm and anxiety to the patient; but even if little can be done in the way of relief, it is

a great matter to be able to assure him of the safety of his brain and of his life, and to keep him out of the hands of quacks.

"The semicircular canals are now believed to serve the purposes of bodily equilibration. These canals, six in number, accord with the main directions of bodily movement, and by means of their nervous expansions are sensitive to the tides of the fluid they contain, which tides in turn are caused by the *vis inertiae* of such fluids when subjected to the movements of the body or head. In Menière's disease, the special sensory nerve concerned is probably influenced by some irritation other than the fluid pressure in the canals, but the result upon perception must obviously be the same."

It is well to know that the symptoms described may be independent of cerebral disease; but perhaps Dr Allbutt gives too favourable a view, if he leads us to abandon all anxiety in such cases.

His cases are interesting, but would have been more valuable if—as he himself remarks—the records had been less scanty and imperfect. This, however, was hardly to be expected, as the notes were written hastily during the routine of an active professional life, with no view to publication. His paper will serve an important end if it awakens others to a careful study of the disease; and we have no doubt Dr Allbutt will also prosecute the inquiry with renewed attention.

Annual Report of the Royal Edinburgh Asylum for the Insane, for the Year 1876; Reports on the Royal Lunatic Asylum of Montrose, for 1876; of the Stirling District Lunacy Board, February 1877; of the Inverness District Lunatic Asylum, May 1877; of the Newcastle-upon-Tyne Borough Lunatic Asylum, 1875; of the State Lunatic Asylum, Utica, New York, for the Year 1875; of the Retreat for the Insane, Hartford, Conn., April 1877; and of the Nova Scotia Hospital for the Insane, 1875 and 1876.

In general, when everything is declared to be going on well in the asylum, a writer in a medical journal has nothing else to say than that he hopes that the calm weather will continue; but now and then remarks are introduced in asylum reports, which embody the experience of medical superintendents upon questions of general interest. In selecting these for notice, or rather for quotation, we indicate no superior excellence over the other reports, for an annual report may perfectly fulfil its object without containing anything likely to interest the bulk of our readers.

The following remarks of Dr Clouston are well worthy of being considered by private practitioners in medicine, with whom it seems to be a too common notion, that a man is a fit patient for an asylum simply because he can be certified to be insane, or "of unsound mind:"—

"The question of sending a patient to an asylum is undoubtedly

a most difficult one to determine in very many cases. It involves so many considerations—family, social, pecuniary, legal, and medical—that this is not wonderful. The medical profession, on which rests the chief responsibility, as a general rule, finds few more grave matters to decide than whether a man is to be kept at home or sent to an asylum, in certain cases. And no definite rules can be laid down in regard to this matter by even those who know most about it. I am very far from saying that every person who manifests any derangement of mind should be removed to an asylum. It is as much the duty of the relatives and medical attendant of a patient suffering from mental derangement to try every means for his recovery at home and out of an asylum, while there is a fair chance of these means being effectual, as it is for them to lose no time in sending him away, when his life or his recovery is in danger through want of the special care and appliances which an asylum alone provides. There are certain considerations for the determination of this question which common sense and medical experience equally approve of. If a patient refuses food, and this cannot be overcome at home, it is, above all things, necessary to send him to an asylum before his strength gets so exhausted as to interfere with his recovery. The brain is far too delicate an organ to stand for long both over-action and starvation. There are certain most pitiable cases, where the love of life, that strongest instinct in man, is so entirely lost—nay, even where the craving for death is as strong as ever the desire to live was in any man—for whom no watching in a private house is at all sufficient, and who should therefore be at once sent to an institution. Where there is present any strong tendency to do harm to others, the same course must be adopted. Sometimes the two things are combined in the same patient; and we have those shocking stories of murder and suicide by the same person, the murder being usually committed on those nearest and dearest to the unhappy person. Usually such cases occur when a man's brain has been upset by alcoholic poisoning, or when it has been exhausted by illness, over-work, sleeplessness, or worry; or when a woman, after confinement, or during nursing, has become upset mentally, and has lost the strongest instincts of her nature; not only forgetting her sucking child, but wishing to take away its life. No woman should be allowed the charge of her child who shows signs of becoming insane after confinement or during nursing. Most cases of the disease called General Paralysis require asylum management, and the sooner the better for them. Where there are unfounded insane suspicions, or hatred of near relatives, the patient needs to be sent away from them, and where can a patient be sent to, if he is not rich, but to an asylum? The mental disturbance that is sometimes caused by epileptic fits very often indeed requires asylum treatment, because such patients are dangerous in the extreme; and in any kind of mental disturbance, if the circumstances

of the patient are such that they manifestly aggravate it; if no proper attendance, or nursing, or food, can be got at home; if the symptoms threaten to become chronic; if no impression is made on the symptoms by the treatment adopted,—then there can be but little question that in such circumstances asylum treatment is needful. On the other hand, asylum treatment is usually not needed in the mental disturbances following a drunken bout, or the transitory delirium seen in growing boys and girls, or the milder mental disturbances following childbirth, or in that occurring during nursing, if plenty of food can be given and the children removed, or in the mere aggravated dotage of old age, or in hysterics, or climacteric disturbances of the milder type; and, in fact, in very many other cases where treatment can be adopted in time, and where the symptoms are mild, and not dangerous. Our present facilities for travel and change of scene and fresh air are unmixed blessings in the early treatment of mental disorders, helping us to break up morbid ideas and associations before they have taken root, and to restore the normal working of the brain. Those good effects are a clear set-off to some of the evils of our modern restless life, and travelling is now so cheap that a working-man can change his whole surroundings for a shilling. I have seen many a patient saved both from falling into insanity, and from being sent to an asylum, after the first symptoms of the disease had appeared, by being sent away for a change. There are exceptions to all rules, however, and in some cases travel and bustle help to aggravate the symptoms."

We have heard the following remark made by other superintendents besides the able physician of Morningside:—

"In the cases of some patients, I think that a thorough change at a certain stage of recovery is most beneficial, and completes the cure, when nothing else would. It is a great pity that a ready transference of patients from one public asylum to another for this purpose could not be more easily effected than is the case at present. I have often heard of sudden improvement in chronic lingering cases through removal to another institution, and have observed the same result to follow the transference here of such cases from other institutions."

Mr Wickham, the superintendent of the Borough Asylum at Newcastle, has a chronic controversy with the English Commissioners on the subject of restraint and seclusion. He thus expresses his views:—"Every year or so we hear of savage and brutal assaults on, and not unfrequently of the murder of, asylum officers by desperate lunatics, who retain only the outward form of a human being; and I am quite at a loss to see how the cause of humanity, science, or anything else good, is promoted by allowing such persons to be at large even in the asylum wards. They are objects of terror to the well-disposed patients; and the feelings of the quiet and orderly who, be it remembered, do all the

work that is done in asylums, should be considered when one is resolving to attempt the task of eradicating the disease in such a case as the one under remark. When an accident happens in an asylum, and an officer or attendant is either severely wounded or killed outright, what is generally reported is to the effect that the patient was 'of a refractory class, but not considered actually dangerous.' This is simply an admission that those in charge of him were ignorant of one of the most important symptoms of his malady; and I respectfully suggest that he who finds out such a symptom, and taking steps to prevent evil consequences, so avoids the probable loss of one or more valuable lives, is more deserving of credit than he who never finds it out at all until irreparable mischief has been done."

The following observations, coming from Dr Howden of the Montrose Asylum, will likely be read with interest:—"Some years ago (Report for 1873) I pointed out what seemed to be the usual change in weight in the course of an attack of acute mania. At first there is a rapid loss of weight. In this stage the patient is in constant excitement day and night, and rarely sleeps; the lungs, and in many cases the skin, give off more than the usual amount of waste, which is not repaired by the somewhat irregular and insufficient amount of food taken. It is worth noting that at this stage, even when the appetite is good, and the quantity of food taken as great, or even greater, than normal, the patient still loses weight, owing in part, probably, to malassimilation, but mainly to undue waste. It might be supposed that in these circumstances the production of artificial sleep by narcotics would tend to shorten the wasting period of mania. As a rule, however, this does not seem to be the case; what is gained in one way is lost in another, and the injury to the digestive and nervous system by narcotics appears rather to retard recovery. If the disease is allowed to run its natural course, the increase of weight is found to be simultaneous with the gradual return of natural sleep; and once the patient has turned the corner, it is remarkable how rapid the increase is. The same observations apply, though in a less marked degree, to melancholia.

We have much pleasure in welcoming Mr James Maclaren's first Report. He succeeded Dr Frederick Skae, who last year went out to New Zealand as Inspector of Asylums. Mr Maclaren has a fine and striking style, and makes his report read like an entertaining story, while it gives evidence of improvements effected and good work done during the year. By a novel and ingenious device the causes of the monthly admissions, discharges, and deaths are shown on three charts appended to the report.

The following extract deals with a question which is at present *sub judice* :—

"As regards the system of unlocked doors, if this is *bond-fide*, if patients can come and go as they please, and if no extra supervision

to counterbalance the nominal freedom is used, then the natural and logical termination of the system would be the abolishing of asylums altogether, and the treatment of all cases at their own homes. At any rate, the very persons whom the public would most wish to see in safe keeping would be those who would take advantage of the open doors, and the remaining patients would be so harmless or helpless that they might be perfectly well treated outside the walls of an asylum. If, however, this supposed freedom is but a name, and if increased supervision is substituted for mechanical obstruction, then the issue, after all, comes to be a very narrow one, and merely a matter of choice between one of two methods.

"Few, I think, can doubt that the common-sense view of the matter is that persons of unsound mind, whose powers of self-control are weakened or altogether gone, and who are dangerous to themselves and others, are in an enormous number of cases safer under lock and key. If these are abolished, and watching by attendants substituted, the work must be inexpressibly irksome, trying, and harassing; and it must be thoroughly bad for the peace of an asylum that the patients should have the feeling that their detention is due to the direct individual action of the attendants. That an asylum can be conducted with unlocked doors, in the true and broad sense of the term, and that this can be done with benefit to the patients (among whom are epileptics, homicides, and would-be suicides), and with safety to the community outside its walls, it is difficult to believe. A certain amount of freedom cautiously given in suitable cases undoubtedly contributes greatly to an already advancing cure, or lightens the lot of those not likely ever again to take their former places in the outside world. To do more than this with such terribly dangerous elements as we have to deal with, seems to be needlessly courting disaster.

"The question may here be advanced, whether there is not a risk of a somewhat enervating atmosphere being produced in our pauper asylums by the too great prominence given to amusements, and by the surrounding of pauper patients with styles of decoration and articles of furniture and ornament beyond what they have been accustomed to. That it would be gross cruelty, unworthy of the days we live in, to refuse to the majority of our suffering patients anything in moderation that would lighten their lot, no one would dream of denying. I cannot but think, nevertheless, that there are cases, especially those of moral insanity and ones characterized by an amount of wanton indulgence in their vagaries, in which a slight taste of some of the discomforts which, outside, would inevitably follow the breaking of human or natural laws, does substantial good. I have observed many insane persons of the types I have mentioned capable of exercising greater self-control when they were made conscious that their pleasure, if not their comforts, would be curtailed in the event of their indulging in forbidden ways. As at present treated, however, they in most instances lose the bracing

and healthy effects of adversity, and often do not suffer in the slightest from the consequences of their own acts, even when these are vicious and wanton. Such a state of matters would be admittedly utterly bad for any one in the general community, and it surely cannot be good for the many within our walls who have not gone far beyond the boundary that separates them from their sane brethren."

It will be remembered by our readers that Mr M'Laren published in the *Edinburgh Medical Journal* an account of a woman who in a fit of insanity murdered her child. She was brought to the Stirling District Asylum, and being determined upon suicide, after many ineffectual attempts succeeded in throwing herself from an upper story. She fell upon the head, receiving severe bruising and laceration of the scalp. What was singular, after the state of collapse had passed by, there was very great improvement of the mental disturbance, so as to give hopes of complete recovery, which, however, were not realized.

Dr de Wolf has a more singular case still, which, though recorded in his last Report, took place some thirteen years ago. An unmarried woman of twenty-five, with hereditary tendencies, became insane from failure to learn algebra, which she had promised to teach to one of her scholars. Her suicidal propensity was traceable to hereditary predisposition—even the mode was similar. Her first attempt, which was made at home, was by hanging, a process which her mother had carried out effectually two years before. The fine brass wire used for this purpose left a deep dark indentation, which remained visible for more than two months after admission. Not only did she refuse ordinary food, but she eagerly caught up and swallowed cinders, buttons, and small stones; and finding these did not destroy life, she secretly stuffed the throat with a bunch of horsehair and flannel, equal to a good-sized hen's egg. Even after this obstruction was removed the sickness remained, and the stomach-pump had to be used, when a coin or similar substance was removed. After this, as Dr De Wolf tells us with that singular gift of antithesis which he occasionally shows, "she would take no nourishment voluntarily, and offered no great resistance when it was administered." Her unceasing cry was that she was eternally lost; on failing to keep her promise to her pupil, she supposed she had committed the unpardonable sin. "Occupying a dormitory with five others in the fourth storey of the building, and watching an opportunity one night soon after admission, she raised the window-sash six inches—it was checked to that height, but could be strained to a quarter of an inch more on one side; she forced herself through this narrow opening, taking with her a blanket, with a knot in one corner. Resting her feet upon the granite belt-course, and closing the window so as to leave the knot inside, although more than forty feet from the ground, she made a spring, and landed on all fours about six feet from the building. Rebounding, she fell

on her back, and was immediately picked up by the watchman, who was within sight at the time." She soon recovered from the injuries which she had received from "this heroic leap," but, as we are told, the shock of the fall had failed to restore her mental equilibrium, or to change the character of her delusions. "As she still resolutely persevered in her attempts at suicide, hers was made an exceptional case, and the occasional use of a thin cotton camisole was sanctioned." It ought to have been a stout linen one, for the patient, being left alone for a few minutes, managed to gnaw through the cotton, free one hand, and hang herself with a sheet which she had fastened to the window-guard. Assistance being procured, "artificial respiration was kept up persistently, and at last a faint gasp was heard, showing that life was not wholly extinct. Vigorous means were now resorted to, to restore the circulation, and these were not abated for a period of nine hours. At six the following morning it was considered the immediate danger was over. The tongue, however, was still protruded, the face deeply suffused, and convulsions recurred at uncertain intervals. This continued for forty-eight hours, the patient apparently vibrating between life and death, when suddenly her countenance assumed its natural aspect: her eyes opened, and she recognized us all; she awoke as it were from a dream, and her reason was perfectly restored. She had no relapse from that day to this."

Dr Aitken at Inverness had a patient who threw himself from a height of thirty-two feet, and who, though he was described as turning over three times, "escaped dangerous if not fatal injuries." A few minutes afterwards no change could be remarked in the patient; the danger he had incurred made not the slightest impression upon him; his incoherence was as fluent as ever; and to the present time his manner and bearing, and the features of the case, continue in every respect the same.

Dr Aitken's course of conduct was clear; he should have hanged his patient by the neck until animation was almost suspended, when, from the experience of Dr De Wolf, a complete recovery might have been expected. Dr Sibbald, when at Lochgilphead Asylum, had a female patient whom her relatives had immersed in the sea till she was nearly drowned, without deriving any benefit. Possibly the case was ill chosen.

The two American Reports are very well written; that of Dr Gray of Utica is a pamphlet of 70 pages, most of which is occupied by medical matters. There is a special pathologist attached to the asylum, Mr Theodore Deecke, some of whose valuable contributions to pathology have appeared in the *American Journal of Insanity*. In the present report there are twelve cases of male lunatics and ten of females, with short but graphic accounts of their history, and very careful examinations after death conducted with the aid of the microscope.

The literary treatment of Dr Stearne's Report does him much

credit, and there are some useful statistics of insanity relative to re-admissions. There is a description of a very interesting patient who complained of being persecuted by spirits. The vividness of the poor woman's sufferings were extraordinary, and all the special senses were affected by hallucinations, which is very rare.

It has been proposed that the British Institution of Commissioners in Lunacy should be transplanted to American soil, and the Association of Medical Superintendents for American Asylums for the Insane feel that they would be "faithless to the trust they have assumed" were they to remain in silence. Accordingly, they speak out, in the Utica Report, in a very emphatic manner, against propositions "for vexatious, frivolous, and interfering legislation." We reproduce the most important of their resolutions:—

"*Resolved*, That the government of our hospitals, as at present constituted, whereby a physician supposed to be eminently qualified by his professional training and his traits of character, both moral and intellectual, is invested with the immediate control of the whole establishment, while a board of directors, trustees, or managers, as they are differently called in different places, men of acknowledged integrity and intelligence, has the general supervision of its affairs, has been found by ample experience to furnish the best security against abuses, and the strongest incentives to constant effort and improvement.

"*Resolved*, That any supernumerary functionaries, endowed with the privilege of scrutinizing the management of the hospital, even sitting in judgment on the conduct of attendants and the complaints of patients, and controlling the management directly by the exercise of superior power, or indirectly by stringent advice, can scarcely accomplish an amount of good sufficient to compensate for the harm that is sure to follow.

"*Resolved*, That the duty of restoring the insane, and of procuring the highest possible degree of comfort for those beyond the reach of cure, implies a knowledge of their malady and of their ways and manners that can be obtained only by study and observation.

"*Resolved*, That the work of conducting any particular individual through the mazes of disease into the light of unclouded reason, embracing, as it does, the drugs he is to take, the privileges he is to enjoy, the letters he is to write or ought to receive, and the company he may see, implies not only certain professional attainments, but a close and continuous observation of his conduct and conversation, neither of which qualifications can be expected from the class of functionaries above mentioned, though appointed for the express purpose of making suggestions and proffering advice.

"*Resolved*, That one of the first things in the treatment of a patient is to secure his confidence, to make him feel that he is in the hands of friends who will protect and care for him; and yet this purpose is completely frustrated when it is incessantly proclaimed to him from the walls of his apartment that the people to whom he has been intrusted are not trusted by others, and that any aid or

comfort he may require must be sought from a power paramount to theirs."

Dr Stearns takes a much more favourable view of General Lunacy Boards. When in Scotland three years since, he writes: "I had excellent facilities for observing the practical working of its Commission, and of hearing the opinions of some of the superintendents who were best qualified to form a correct judgment as to the value of its labours; and I think I may say, that while it is thought there was a degree of friction in the working of the Commission at times, yet, as a whole, the plan was an excellent one, and worthy of approbation; that the Commission had, by its system of frequent inspections, its counsels and advice, its yearly publications, which contain a large amount of information relative to the working of asylums and the needs of the insane, and above all, by bringing to bear a stimulus to all superintendents and their assistants, to attain a higher standard in the management and treatment of the insane, been productive of a very large amount of good to the general cause of asylums. It was also thought that their position outside of those having the immediate management of asylums enabled them, through their publications, to exercise a large influence on the public, and inspire confidence in reference to the utility of asylum care and treatment; that their labours were in harmony with, and rather supplemental to, those of the superintendents, and at the same time represented the interests of the public, and, standing between the two, promoted unity of feeling and interest."

At the same time, Dr Stearns, from the peculiar government of the United States, considers a General Board of Lunacy to be a scheme impracticable in America.

Nathan the Wise: A Dramatic Poem. By LESSING, translated into English Blank Verse by ANDREW WOOD, M.D., F.R.S.E., F.R.C.S.E., etc., etc. William P. Nimmo: London and Edinburgh: 1877.

IT is very creditable to himself and a lesson to younger men, when a senior in the profession so fully employed, so much occupied with public business, and so well entitled to repose on his laurels already won, as Dr Wood, takes all the trouble which the work mentioned above necessarily implies. It shows how assiduously he has maintained the familiarity previously acquired with the literature both of Germany and of his own country, as indeed he had already proved in regard to Latin by his metrical translations of the *Satires*, the *Epistles*, and the *Art of Poetry* of Horace. We may add that the same remark is applicable to his translation into blank verse of *Don Carlos, a Tragedy*, by Schiller.

We are not prepared to say that the inborn *vis poetica* is strong

in Dr Wood, nor that more of the *limæ labor* might not have been expended on his works, for indications of haste might be pointed out; but we say advisedly that a great lesson is taught by the fact, that a gentleman in large practice, and who occupies the honourable position of being an influential member of the General Council of Medical Education, can devote the corners of his time so successfully to the cultivation of polite literature.

The Preface to *Nathan the Wise* is very interesting and well written, suggesting the idea forcibly that our author is better fitted to shine in prose than in poetry, and may yet do further credit to his profession by composing and publishing an instructive book.

We read the poem with unabated interest, and can testify that it contains many powerful passages which have evidently not suffered in the translation; and not a few sentences might be quoted with advantage, had we space, on account of their terseness and incisive force. Lessing was not a Shakespeare, and you desiderate the splendid genius which so often thrills the reader's soul; but his story is well told, and the interest sustained to the last. The great lesson aimed at in the piece seems to be the promoting of toleration, kindness, charity, irrespective altogether of distinction in creed; but we must say that the Christians brought forward in the play, being either very hateful or weak, are decidedly eclipsed both by the Jew "Nathan the Wise," and by Saladin the Sultan of Babylon. The fact is, Lessing belonged to the same negative school as our own poet, Alexander Pope.

We cordially recommend Dr Wood's handsome volume to the readers of the *Medical Journal*.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LVII.—MEETING I.

Wednesday, 7th November 1877.—Dr GILLESPIE, *President, in the Chair.*

I. *Mr Chiene* showed a BOY on whose case he had read a short communication at the last meeting of the British Medical Association. He was then unable to say that the boy had recovered thoroughly; but he had now brought him before the Society to show his complete cure. He had suffered from symptoms of acute cervical curvature, and was admitted with symptoms of suffocation. On

examination, an abscess was found pointing at the back of the pharynx. Mr Chiene accordingly made an incision, one and a half inches below mastoid process, and behind and parallel to the sternomastoid. By gradually working down behind the sheath of the carotid, he reached and evacuated 8 oz. of pus. The suffocative symptoms passed off, but pain began, probably because the pus had acted as a splint, keeping the diseased bone from movement. A plaster-of-Paris apparatus was therefore applied to fix the head. The wound healed in July, and he could now move his head with freedom, the only evidence of the disease being a slight projection of the second cervical vertebra.

II. *Professor Spence* showed the following SERIES OF CALCULI:— (1.) Twenty-four calculi removed from an old man with a deep perineum. (2.) A curious heavy calculus which had not been yet examined, but was unpleasantly studded with oxalate of lime, thus causing the patient pain; while operating, he had found difficulty in grasping the stone firmly. The patient was seventy years of age, had suffered long, but made a good recovery. (3.) Seven calculi removed, along with two others not shown, from the same patient, who had also given him two small sample bags filled with calculi he had passed. He had been sounded in Montreal and London, but no calculi had been detected. Those passed were prostatic, containing 90% of phosphate of lime; but he was not sure if those he had removed were from the prostate. Perhaps prostatic calculi may have formed nuclei in some cases. The diagnosis in London was that the prostate was completely destroyed. In the operation he found, however, that the patient had a deep prostate. (4.) Two calculi, one of uric acid and phosphate of lime, and another small one of oxalate of lime, he had found on examining the incision with his finger. (5.) Three calculi removed from a boy aged ten, who had suffered from his birth. (6.) Two small calculi, one of oxalate of lime, another of oxalate of lime and uric acid. He did not crush in the latter of these two cases, because while the first grasp with the lithotrite gave a diameter of $10\frac{1}{2}$ lines, the second, by some mistake probably, was 15 lines. The patient recovered, and he therefore did not regret that he had performed lithotomy.

III. *Dr P. H. Watson* showed (1.) an ALVEOLAR SARCOMA he had removed that morning from a patient eighty-one years of age. It occupied the submaxillary region, and had been ten years in growing. There were cavities in it from mucoid degeneration, with fat crystals. It had arisen, not from a glandular structure, nor from the usual site of origin of such a tumour, namely skin, bone, or muscle. (2.) An OXALATE OF LIME CALCULUS from a patient, aged seventy, who had suffered long from it, but more severely recently. There was no difficulty in detecting the stone, when the beak of the sound was turned round within the bladder,

and the trigone of the bladder supported by the finger in the rectum. He performed the ordinary lateral operation. As the prostate was large, there was some difficulty in seizing the stone in the forceps. It was an oxalate-of-lime calculus, but of an unusual form, being an ovoid disc, the central portion alone presenting the mulberry characters in colour, but not in roughness; the margins and edges were incrustated with uric acid and phosphates.

IV. *Dr Argyll Robertson* exhibited the EYE of a patient, æt. 60, which he had excised for melanosis of the eyeball. On section, the interior of the eye was found completely filled with the growth, which at three spots it had pierced the sclerotic, two anteriorly near the cornea, and one near the optic nerve. The optic nerve itself was not involved, and at the point of section was found normal. Two years ago he had trephined the eyeball for glaucoma. Now we know that intraocular tumours give rise at first to glaucomatous symptoms. In this case, however, the glaucoma long preceded the development of the tumour, as, twelve months after loss of sight, the ophthalmoscope showed no tumour; and as the chief mass in the interior of the eyeball was posteriorly situated, it could then have been easily recognised. Thus this tumour and the glaucoma had no connexion. Microscopically, the tumour was a pigmented sarcomatous growth, with small, nucleated, pigmented cells, scanty stroma, some cholesterine and oil globules from fatty degeneration. As the optic nerve was unaffected, and the conjunctiva diseased only at one spot, which he carefully removed, he hoped there would be no recurrence.

The President thanked the members for showing such interesting cases and specimens.

V. *Dr Young* then read *Dr Macbain's CASE OF COAL-GAS POISONING*, which appears at page 512 of this Journal.

The President said the Society would be glad to hear any remarks. The only case he personally had met with was in Sir James Simpson's lifetime, when he was experimenting in anæsthesia. The subject of the experiment was an old white horse at Professor Dick's Veterinary College; but when the animal was supposed to be under the influence of the coal-gas it was found to be dead, and therefore no further experiment could be made.

Dr P. H. Watson felt that the Society was indebted to *Dr Macbain* for his paper. Such accidents were fortunately uncommon, although gas was in almost universal use. While, therefore, the repetition of such experiences were not likely to be frequent, a much more serious gas question arose out of such cases of poisoning in whether our strength and health were not being insidiously sapped and weakened by its habitual employment, occasioning a minor grade of coal-gas poisoning. The result in *Dr Macbain's* case was more fortunate than usual. He remembered a case in Southampton, where an old woman and her niece were the

sufferers. The old woman died, but the niece recovered. In Dr Macbain's case the aid was fortunately speedy. It was indeed difficult to understand how, after so many hours' exposure in a room nine feet by nine, and with the window closed, she should have recovered. The result redounded all the more to the credit of Dr Macbain.

Professor Spence mentioned a case published by Dr Taylor, where an Australian gentleman suffered from coal-gas poisoning. He had been unaccustomed to its use, and had blown out the gas on going to bed. He only lived forty-eight hours.

Dr Craig suggested that the "gas tap" might have been overturned so much that not a very great amount of gas escaped.

Dr Peel Ritchie suggested that as, according to Taylor's *Manual*, carbonic oxide was the poisonous ingredient in coal-gas, perhaps the proportion of it in North Berwick gas was small. The suggestion of the steam bath was, he thought, a good one.

Mr Bell knew of two cases where Free Church members of Assembly, from the Highlands, had blown out the gas.

Dr Argyll Robertson thought there was one point wanting in the case, viz., whether the increased perspiration smelt of gas. As this was not mentioned, it was difficult to say whether the treatment was beneficial or not.

Dr J. B. Buist mentioned that the case seemed analogous to what occasionally occurred to men engaged in cleaning out large gas-holders. The man who was poisoned was said to be "gased," and the only treatment employed was plenty of fresh air. Fatal cases were rare.

Mr Chiene then read a paper on ANTISEPTIC DRESSING OF WOUNDS, which appears at page 509.

The *President*, as one of the managers of the Royal Infirmary, was delighted to hear that Mr Chiene was trying to cheapen the antiseptic material, and he hoped that all in any way connected with public institutions would give their best attention to this point. At present it cost the Infirmary about £1000 yearly. He wished to ask if the sponges could be used more than once.

Mr Chiene explained that they could.

Mr Spence thought when he saw the notice of Mr Chiene's paper that it would be on the general antiseptic treatment and the methods of carrying it out. He objected to the term "antiseptic" being restricted to one special method; there was no surgeon who did not treat his wounds on an antiseptic plan; indeed, he believed that a wound treated in the open method was as antiseptic as those treated in a special manner, since the putrefactive discharges were allowed free exit. Mr Chiene's paper treated of methods of diminishing the cost of antiseptic dressings, and further simplifying them. In this he cordially concurred. As to Lister's antiseptic treatment, he wished to know what about its results. For a series of years he had given forth his, good, bad, and indiffer-

ent. Thus lately, in twenty amputations, one of them double, he had only three deaths, and one of these was an amputation at the hip-joint for a very large cancerous tumour, where the operation, by the patient's express desire, was carried out with the most strict antiseptic precautions. Were there no deaths from amputations in the wards where antiseptics were carried out? Then the antiseptic treatment was said to be specially applicable in the treatment of chronic abscesses. A modification of it was, he believed, good for such cases. Still all were not cured by the strict method, as could be seen from the fact that owing to recent changes in the clinical wards many of these were sent out uncured. In his own wards the antiseptic treatment was occasionally tried by its believers, as it was alleged that those who did not believe in it could not practise it aright. He himself, therefore, only watched the effects, and left the management to others. In one case of abscess in the ward the dressing was carefully done. All went on well, and each day his attention was called to the favourable state of the case. But first putrid smell appeared, and then bacteria, so that the special treatment was dropped and carbolic-oil dressing used, with the result of diminishing the fœtor. The explanation usually given was that some minute precaution had been omitted, that some mistake had been made by a nurse, and so on. What was the practical use of a treatment where the slightest slip vitiated the result, so that according to a recent testimonial there were only a very few men who could be trusted to carry it out properly? If his own cases went wrong, or if he had pyæmia, then he would do anything to avert such results. But the causes of pyæmia and septicæmia were, he believed, more owing to the state of the constitution than to any method of treatment. As to the theory on which the antiseptic treatment was founded, the difficulty was that if germs came from without, how then could we have a series of cases of lesser amputations unsuccessful, and a series of more important ones under similar conditions successful? Why was this the case, when, in the latter series, they had a larger wound-surface? Tyndall, in a recent lecture, had advanced the theory of germ-clouds, by which it could be supposed that a wound would occasionally escape. All he could say was, that seemingly they had hitherto avoided his cases. It seemed really a *reductio ad absurdum* to imagine that a series of cases could in this way escape.

Dr Heron Watson said that any improvements in surgical dressings could not fail to be a matter of interest to all practical surgeons. In this aspect of the question the constant varying procedures of so-called antiseptic surgery was a study and a caution. All antiseptic surgery was unfortunately shown not to be aseptic, and much of it was not surgery at all. No one who has employed the antiseptic method, or watched its use in accredited hands, could fail to have noticed that it constantly failed to secure aseptic results. Where the blame was to be laid it might be difficult to say; but while the

failure had to be acknowledged, the explanation of such failures among the enthusiasts formed an interesting study for the keen critic of the processes of reasoning adopted by a certain class of minds. It was no new doctrine that the less one exposed a wound, or admitted air to it, the better for wound and patient. In this aspect of the treatment of wounds, Mr Chiene's contribution to aseptic surgery was a move in the right direction. It was certainly a method of occlusion, with exclusion from the wound not only of air but of antiseptics. But were such methods of occlusion adopted in the larger wounds and injuries altogether destitute of risk? Could we so implicitly trust to the absence of pain, freedom from constitutional disturbances or thermometric rise of temperature, as to feel confident all was going well with the wound, that there was no tension, and no septic mischief within the wound, which the occluding dressing only served to conceal? It might be urged, that if such anxieties were to affect us as practical surgeons in dealing with, we should never be content, except we saw the utmost cranny of every wound by opening it daily, or stuffing it with dressings, that it might heal from the bottom. But on the other side of the question, Dr Watson might mention that at an early period of antiseptic treatment he had employed methods of occlusion in the treatment of wounds combined with drainage and antiseptic preparations and dressings—sealing the wound, except where drainage was effected, by means of cotton wool dipped in a spirituous solution of shellac and carbolic acid, and dressing externally with cotton-wool saturated in oil and carbolic acid. In minor cases this had answered excellently, but Dr Watson had been led to look on it with suspicion, owing to the occlusion proving in an amputation case so efficacious as to prevent the escape of septic results, and apparently to favour the development of acute osteomyelitis, with acute pyæmia and toxæmia. It was interesting to watch the progress of antiseptic procedure. When first introduced with a much-vaunted success, carbolic acid could not be applied to the wound itself in too strong a form; and even sponging the membranes of the brain with the pure acid was deemed quite in accordance with this new legitimate scientific induction. Next it was found that carbolic acid was an irritant and a powerful poison. Absorbed from the wound the urine becomes olive-coloured, the breath becomes saturated, and nervous symptoms occurred—nay, even fatal tetanic consequences might be induced. The wound now needed to be protected from the carbolic applications to prevent the absorption of the poison, and to prevent it from its local irritant effect; while the applications to the wound of the lotions employed in dressings, and the very dressings themselves, became mere shadows of their former selves. Now we have reached a point where not only is the wound protected from the carbolic dressings, but actually the protection is protected again; for that was virtually the character of this method of occlusion—or, as he might call it, antiseptic exclusion. Dr Watson

was by no means satisfied that the ordinary theory upon which the use of antiseptic applications was founded accounted for the results claimed for their use. Was it by straining the air of germs, and then excluding septic influences from the wound, that the dressings effected their end? or was it not that these carbolic-acid dressings covering a large area of skin, and affording facilities of absorption into the blood, of the carbolic acid—even to the extent of olive-coloured urine and hæmaturia—produced such a degree of saturation of the liquor sanguinis, that neither the wound, nor the discharge from it, nor broken-down detritus of bloodclot, within vessels adjacent to the wound, became septic—that is to say, became the radius of bacterial development? Were it so, then all this activity within and without the wound might possibly do nothing more than afford a surface for the cutaneous and respiratory absorption of carbolic acid to the point of safe blood-saturation. And were this shown to be practically the case, then possibly antiseptic surgeons might be induced, taking a hint from the expression of the sympathetic procedures of the Middle Ages, to leave the wound a little more alone to heal uninterfered with by their activities, and expend their efforts upon promoting the saturation of the patient's system with what was found more truly to conduce to the antiseptic result.

Mr Bell had of late years been much occupied in following the changes in treatment, and his spirits had been damped by hearing from the chief supporters of the method of the extraordinary difficulties. His present state was that he used it in some suitable cases, and did not in others. He kept in mind the teaching of his revered preceptor *Mr Spence*, that nature will heal wounds if you let them alone and avoid tension; and never forgot that without any antiseptic precautions *Mr Syme* had thirty-seven ligatures of the femoral without a death.

Dr A. G. Miller thought it was hardly suitable in him, a young surgeon, to say much. Many subjects arose in his mind, but he would refer to one only. *Mr Chiene* was anxious to get rid of the spray as much as possible. This he thoroughly sympathized with. In many cases the spray was troublesome, needed an intelligent assistant, incommoded the operator, dimmed his spectacles, made him perspire, so that septic materials fell from his forehead into the wound, and so on. When he stood for an hour and a half in a carbolic atmosphere he did not enjoy his dinner after it, had a bad taste in his mouth, and scanty and high-coloured urine. To diminish the necessity for spray would be a good service to surgeons and to antiseptics.

The *President* did not think that *Mr Chiene* had raised the question of antiseptics in general in his paper, but had confined himself to some special points. As to chronic and psoas abscesses, he appealed to gentlemen present if they had not seen people walking about with humps on their backs caused by acute curvature,

who had evidently recovered from the disease when there was no antiseptic treatment. But at the Royal Infirmary, if they spoke of sending out such a case when under antiseptic management, they were told the patient would die. Now, of patients treated antiseptically, some got better, some remained *in statu quo*, though they had been actually one, two, or even three years in hospital.

Dr Argyll Robertson said that, as to the use of sponges, they did not often need dressings in ophthalmic surgery; but in enucleation they found the sponge answer well. It kept up pressure, soaked up discharge, and could be used again and again.

Dr Bruce stated that he had opened one case of psoas abscess without antiseptic precautions, and the patient made a good recovery.

Mr Chiene thanked the gentlemen for the way in which they had received his communication. He regretted that he had disappointed Mr Spence, but he considered that the time for such discussion was now past; and he wished to keep in mind that he himself was only beginning his career, whereas Mr Spence was far advanced in a long and honourable one. In using the term antiseptics, he meant by it what Germans called "Lister's method." Speaking for himself, he thought that by this method the probability of a cure in a psoas abscess was much greater. In regard to the case he had shown, he believed such were rare. The quantity of pus was great, the disease of the bone extensive, but yet there was a movable neck. This was what he aimed at. He thanked Dr Watson for his interesting remarks. He himself had not suffered from Dr Miller's inconveniences, and he hoped Mr Bell would soon pass from the state of expectancy to that of belief.

Prof. Spence said he had frequently opened abscesses in such cases as Mr Chiene had brought forward, and with good results.

The *President* congratulated Mr Chiene that his paper had brought out such an interesting discussion.

Part Fourth.

PERISCOPE.

(Continued from p. 473.)

TREATMENT OF ANOMALIES IN THE SPANNING OF THE DRUM-HEAD. By Professor Dr JOS. GRUBER.¹

If we are now, from what has been already said, in the agreeable position to ascertain with certainty the indication for operative procedures in cases of irregularities of the spanning; so we can, on

¹ *Monatschrift für Ohrenheilkunde*, August 1877, Berlin.

the other hand, look upon the acquisitions which the operative otiatrik of the present day has taught us for the improvement or removal of these conditions with as much satisfaction. These are the simple *Myringotomy*, which was introduced into practice by me, frequent puncturing of the drumhead, and finally the *Myringectomy*, of which methods I consider the burning out with the aid of the galvano-cautery, correspondingly larger pieces of the membrane, as very much superior.¹

The simple incision, with which I also reckon the cutting through of the posterior pouch of the drumhead, as well as frequent puncturing of the drumhead, will be indicated by a partial or total overstretching of the drumhead, and I practise it according to the rules concerning these operations laid down in my previously mentioned works.

The burning out of a piece of the membrane I practise, on the other hand, in total or partial relaxation of the drumhead, and use for this purpose with great success the instruments prescribed by Voltolini for galvano-caustic operations on the ear.

The platinum end of the same we can prepare for ourselves, for the special case, previous to the operation, so that we are able to burn out with the greatest ease small, larger, or differently shaped pieces. In case I wish to remove a larger piece from the membrane by means of the galvano-cautery, I arrange the platinum end of the instrument in such a manner that the part which is intended to burn out the piece stands at right angles in proper form and size to the other. With a good illumination, obtained with the aid of the reflector fastened on the forehead, whilst I fix the speculum introduced into the external auditory meatus with the left hand, so as to bring that piece of the drumhead into the field of vision which it is intended to destroy, I then bring the galvano-cautery quite close to it without touching, and only after the instrument is quite close to the drumhead do I make it glow and burn the part out.

I consider this method of proceeding much more preferable than that of bringing the already glowing instrument into the external auditory meatus, because the least motion of the head of the excited patient, which he could easily make notwithstanding any amount of fixing, would readily cause us to burn parts which we were anxious to avoid. It is much easier to operate according to my

¹ The introduction of the galvano-cautery into the treatment of diseases of the ear is the exclusive merit of our distinguished colleague, Professor Voltolini; on the other hand, there is the endeavour of Herr Professor Politzer to claim for himself the priority of the multiple perforation of the drumhead introduced by me into practice,—a presumption which has its psychological basis in this man's passion of claiming for himself priority in disputed subjects, and is certainly condemned by every impartial and intelligent judge. We will hope Herr Professor Politzer will at last cease, after the latest reprimand, through the advancing of unjustified contests for priority, to deprive earnest workers of precious time. (Compare *Anzeiger der k. k. Gesellschaft der Aerzte zu Wien*, 1877, Nos. 30-32.)

method, even for one accustomed to the operation,—*i.e.*, where the instrument is introduced before the current has been established.

Sometimes the relaxed portion of the drumhead is strongly pressed inwards, frequently it lies upon some structures which must be spared; for instance the union of the incus and stapes. In all such cases it is necessary, immediately before the operation, to apply the air-douche, or, when it is sufficient, to make the patient make use of the Valsalvian method of inflating the tympanum in order that that part which is to be operated upon may be forced towards the external auditory meatus, and away from contact with other important structures, that they may be spared with more certainty. If, from some reason, the relaxed part cannot be kept in the proper position for operating, it is necessary for an assistant, exactly at the moment of operating, to force the part to be operated upon towards the external auditory meatus by means of the air-douche, whereby the deeper structures will not be needlessly injured.

Meantime I take the liberty, with regard to further caution as well as regards the after-treatment, to refer to my formerly mentioned works, and to the remarks interspersed in the following histories of my patients: may the latter serve to the illustration of what has been said.

CASE I.—Relaxation of the Upper Portion of the Posterior Segment of the Drumhead, giving rise to Dulness of Hearing and Noises in the Ears; Application of the Galvano-cautery; Cure.

George Køberer, 16 years of age, a student, states that he has not heard so well for about 3 years in the right ear, and is tormented by constant noises in the same ear. The intelligent patient relates that he has suffered for years previous from frequent attacks of catarrh of the mucous membrane of the pharynx, which was complicated in the beginning with periodic attacks of dulness of hearing. He, at an early period of his impairment of hearing, but particularly when the impairment was more constant, very frequently made use of the Valsalvian method in order that he might obtain a momentary improvement of his hearing, in which he was always successful. In the course of time he must always betake himself more frequently to this method, and the result was that the continuation of the improvement by that was continuously less satisfactory.

By the objective examination, the external auditory meatus of the left ear appears normal; the drumhead is a little driven in; slightly opaque; the Eustachian tube easily permeable; by the forcing of air into the tympanum the drumhead yields moderately towards the external auditory meatus. The hearing distance of the left ear is normal; no subjective symptoms, such as noises in the ear.

The examination of the right ear showed the external auditory

meatus to be quite normal, the drumhead slightly opaque, the short process strongly projecting, the handle of the malleus drawn in, but distinctly visible. The posterior superior division of the drumhead, and indeed more than the posterior superior quadrant, is sunk far inwards, and lies upon the distinctly recognisable union of the incus and stapes. Hearing distance for the watch, 5 ctm.; continual noises in this ear.

If we examine the drumhead whilst the patient performs the Valsalvian method of inflating the tympanum, so we see the posterior segment of the drumhead projecting itself in a bladder-like form towards the external auditory meatus; the union of the incus and stapes becomes invisible, and if we measure the hearing distance when the drumhead is in this position with the same watch, it is 35 ctm. more than before, so that the patient hears the watch at a distance of 40 ctm.

If we hold the sounding tuning-fork before the external auditory meatus of the right side, the patient states that he hears it better during the Valsalvian method than before and after; whilst, if we place the sounding tuning-fork on the vertex during the Valsalvian method, it is heard weaker in the right ear than before and after the performance of the Valsalvian method.

With all the above-mentioned tests of the hearing, we have obtained the same results, if, instead of the Valsalvian method, the air-douche is employed to improve the spanning of the drumhead. On the other hand, all the examinations of the left ear denote a normal spanning of the drumhead.

From the conditions found in the right drumhead, the diagnosis was a partial relaxation of the drumhead, which was not difficult to make, and that the hearing tests, but chiefly the method of examination indicated by me in what has been already said, clearly invited to an operation. Therefore I took the patient into my clinique on the 5th February of this year, and proceeded on the following day, in presence of my students and hearers, with the assistance of Herr Dr Pollak, to the operation.

After that the patient had made the Valsalvian method, whereby the membrana tympani bulged itself out in a sufficient degree to the necessary position, I burned out with the greatest facility a round piece of about 2 mm. in diameter from the posterior upper quadrant. The pain in this case was very slight, and, as the patient afterwards stated, only at the moment of the touching. There was not the slightest bleeding; within the opening made we quite distinctly saw the articulation of the incus and stapes and the upper part of the niche of the fenestra rotunda. The hearing distance for the watch amounted immediately after the operation to 26 ctm., which remains before and after the Valsalvian method quite the same. By the performance of the Valsalvian method, a loud gurgling noise, indicating perforation of the drumhead, is produced.

The ear was now gently closed, the patient was told to keep his room, and, if pain should come on, to apply cold wet applications to the neighbourhood of the ear.

At the evening visit the patient is entirely free from pain; not the least appearance of reaction has taken place. The hearing distance amounts now to 45 ctm.

7th February.—The drumhead in the neighbourhood of the wound from the operation is a little reddened; on its edges a little yellowish exudation; malleus distinctly visible; no pains; hearing distance, 56 ctm.; no tinnitus aurium.

8th.—The appearances on the drumhead the same as yesterday. By the performance of the Valsalvian method, distinct perforation's noises, hearing distance 63 ctm.

9th.—Edges of the wound swollen, reddened; hearing distance for the watch has fallen to 11 ctm.

10th.—The redness and swelling in the neighbourhood of the operation's wound have increased. Through the wound of operation we observe the intensely reddened mucous membrane of the tympanum. Otherwise the patient feels himself quite well; experiences no pain; hearing distance, 5 ctm.

12th.—Swelling and redness of the structures implicated by the operation are much decreased since the day before yesterday. Some yellowish exudation covers the parts of the drumhead lying near to the opening made by the operation. By performing the Valsalvian method, the air passes through the wound with a strong perforation's sound. Before and after the Valsalvian method the hearing distance for the watch amounts to 10 ctm.

15th.—The mucous membrane of the tympanum has lost the redness of inflammation. The opening in the drumhead appears much smaller; hearing distance, 15 ctm.

17th.—No appearance of inflammation; patient feels himself quite well; the opening in the drumhead is already surprisingly smaller. Hearing distance of watch, 24 ctm. No noises in the ear. The patient was permitted to leave the clinique to-day, to be treated now as an out-patient. In the course of the next three weeks, when he was examined repeatedly, the opening closed by a membranous cicatrix. The improvement of the hearing power still increased a little, so that at the last examination he heard the watch at a distance of 35 ctm. Satisfied in the highest degree by this result, he returns to his calling without being tormented by the formerly so burdensome noises in the ear.

(To be concluded in our next.)

FUNCTIONS OF THE SPLEEN.—Dr Schiff, the well-known physiologist, reports on the functions of the spleen. His conclusions are as follows:—1. Extirpation of the spleen has no lasting influence upon the absolute or relative quantity of the white or red globules of the blood. 2. For a short period after the operation a

considerable augmentation of white globules, with or without diminution of red globules, is observed. These alterations do not depend on the absence of the spleen, but only on the operative procedures necessary to the ablation of the organ, and these phenomena remain very much the same if the preparatory manœuvres are not followed by ablation of the spleen. 3. After ablation of the spleen, swellings of the lymphatic glands rarely take place, nor do enlargements of other glands. The so-called supplementary spleens are not found, even when the animals are allowed to live for more than a year and a half after the operation, and even when this has been performed within a few weeks after birth. 4. Swelling of the mesenteric glands, which is occasionally observed in animals deprived of the spleen, appears to be due to a peritonitis, partial, but prolonged, which sometimes follows the operation. 5. The spleen appears to augment in volume from the fourth to the seventh hour of a sufficient stomachal digestion. 6. The spleen, during digestion, or rather during the stomachal absorption, prepares the ferment which, entering with the blood the tissue of the pancreas, transforms in this gland a special substance (probably albuminoid) into *pancreatopepsin*, or trypsin,—that is to say, a substance apt to digest albuminoid bodies. 7. After the extirpation of the spleen, the pancreatic juice loses its digestive influence on albuminoid bodies while preserving its other digestive properties. The duodenal digestion of the albuminoids is no longer distinguished by its energy and rapidity; it is then feeble, as in other portions of the small intestine. 8. After ablation of the spleen, the substance destined to form pancreatopepsin accumulates for the most part in the pancreas, and may perhaps be transformed into pancreatopepsin under the chemical influences which accompany the commencement of putrefaction after death. 9. After the destruction of its nerves the spleen remains flaccid. It no longer enlarges, and it becomes atrophic, as in general do erectile tissues whose vascular nerves are paralyzed.—*Journal des Sci. Méd. de Louvain*, 1877, pp. 365, 375.

THE SURVIVAL OF THE FITTEST.—The *American Journal of the Medical Sciences* has reached the respectable age of 50 years. It is the continuation of the *Philadelphia Journal of the Medical and Physical Sciences*, established in 1820. The *Edinburgh Medical Journal* is the only one in our language now published that appeared before the last-mentioned date. The *Lancet* appeared in 1822. The *Boston Medical and Surgical Journal* began with its present name in 1828, only a few months after our Philadelphia contemporary, being formed by the fusion of the *New England Journal of Medicine and Surgery* (started in 1812) with the *Boston Medical Intelligencer*. The *London Medical Gazette*, which about twenty-five years later united with the *Times*, began in December 1827. We have nothing to say of our own merits; we leave self-praise to those cheaper

journals that must choose between it or none, but we may say of our above-mentioned contemporaries that they are a striking illustration of the law that we placed at the head of these remarks.—*Boston Medical and Surgical Journal*, 18th October 1877.

IN the *Boston Medical and Surgical Journal* of 19th July, Dr Theodore W. Fisher gives the faintest outlines of eight cases of insanity which occurred in his experience during a period of religious revival. He says "it would not be fair to attribute all these and similar cases to the effects of revival preaching"—and here we perfectly agree with him, for, as far as we can make out, these eight cases occurred in persons whose physical constitution was more or less weakened—especially as regards the nervous system—by influences entirely apart from the religious movement. Although by no means well disposed to those widespread epidemics of paroxysmal emotionalism, we cannot help entering a protest against the rough-and-ready conclusion which so many have arrived at, that they are a very prolific source of acute insanity. Such papers as that under consideration tend to confirm the opinion by the very looseness of their compilation. The real state of the case is, that there are in every community a certain number so predisposed to insanity that they give way under the slightest pressure. Revivals attract the public attention, and their apparent consequences—public criticism. If in a city such as New York any individual is able within his own experience to collect eight or ten instances of insanity occurring during a revival—more especially if they present the symptom of religious melancholia—they are at once set down as "revival cases." In the first place, we doubt very much whether, supposing it were possible that such vast crowds could be brought together under the influence of any other emotion, an equal amount of insanity would not be produced. In the second place, full allowance must be made for certain influences which have been slowly at work in the religious lives of individuals prior to the revival influences, which we believe have a much wider, more insidious, and more powerful effect than the mere excitement of those occasions. According to the sect he or she may belong to, the individual may have had inculcated a system of introspection verging closely on the morbid; discipline of the mind or body; fastings and mortifications of the flesh inimical to health; a general exalted emotionalism not far short of ecstasy, or an excluding and exclusive scheme of salvation. These primary influences affect the predisposed devotee of the cathedral, the kirk, and the meeting-house alike—they culminate in the revival tabernacle.

Again, allowance must be made for those cases of incipient insanity, primarily utterly unconnected with religious emotion, which are accidentally conditioned by an outbreak of revivalism. It is just as fair to say that steam engines, electric telegraphs, and mesmerism, were causes of insanity, because when each particularly

occupied the public attention the delusions of the insane took its bent, as to state that religious revivals are productive of acute religious melancholia.

In these remarks we are pleading, not in the cause of revivalism, but in that of scientific inquiry. In this, as in many other matters, the apparently most prominent incident in the history of a case has comparatively little pathological significance.

A. BLUM, in the *Archives Générales de Médecine* for August 1877, commences a paper on the diseases of the urethra in women. The anatomy and physiology of the part are first carefully described, and then the methods of examination which are most useful. Dilatation of the female urethra, though re-introduced within the last forty years, is as old as the middle of the sixteenth century, when it was carried out by means of special instruments to permit the extraction of stones. It may be done immediately or gradually, the former being the more preferable method. Simon used to incise the external orifice with a knife or scissors, and then dilate with a series of caoutchouc specula. Busch, Ellinger, and others have invented special instruments for the purpose. It is occasionally followed by incontinence; but rapid dilatation is a rational and necessary operation in suitable cases. In discussing the separate diseases, urethritis is shown to be not so uncommon as it was supposed to be by Hunter, Vidal, and others. It is by far most frequently found in connexion with gonorrhœa. Sigmund found urethritis and vaginitis combined in 476 cases, vaginitis without urethritis in 282, and urethritis alone without any concomitant inflammation in only 5 cases. Occasionally the disease spreads to the neck of the bladder. It is not so severe a disease as in the male, and the diagnosis is not always easy, and cannot be made without physical examination of the parts. Foreign bodies of all kinds are sometimes found in the urethra, and give rise to troubles in urination, inflammations, and sometimes to hæmorrhage, fistula, and incontinence. They should be removed, if necessary after dilatation. Strictures are of very unfrequent occurrence in the female urethra, and are either congenital, traumatic, or rarely syphilitic. Their seat is usually at or near the external orifice; they are seldom of large extent. The proper treatment is slow and gradual dilatation. As to whether fissures of the urethra similar to those of the anus have a real existence, the author cannot yet determine. They have been supposed by many recent writers to exist in cases where there was very frequent necessity to make water, and great pain and irritation afterwards without any other obvious cause. In some of these cases forced dilatation has entirely relieved the symptoms. The future alone can determine this highly-interesting question. The remainder of the paper is to follow in an early number.

ONE remarkable person I may allude to as having joined our party. This was Capo d'Istria, whom I first met during my visit

to Corfu, of which he was a native. His talents as a diplomatist need not be alluded to here, but a physical feature peculiar to him was ethnologically so curious and unprecedented that I cannot forbear recording it. I allude to the enormous size of his ears, which measured in length nearly five inches, with a corresponding breadth and thickness. One might consider such a fact as a mere monstrosity or accidental hypertrophy of the parts in all their integrity. But that was not the case, for the Count assured me that the same peculiarity had existed proportionately since his birth, therefore it must be looked upon as an exceptionally peculiar ethnological case.—*Autobiography of A. B. Granville, M.D., F.R.S., etc.*, 1874, vol. ii. p. 240.

ADVICE TO A FRIEND.—You have come to reside in this metropolis at a dangerous time of life, and it is peculiarly so to one of your mental characteristics. The age of forty is a critical period in any hard-working and conscientious physician's life. Such a man has probably already secured a certain foundation for success, and a patronage which will support himself and family. But he does not yet feel assured of this, and still labours as unintermittingly as for the previous ten years to certify his success. But God has given sufficient vital force to last a man of average strength, if he taxes it continually in the practice of our profession, only till he is about forty years of age, or more accurately, to the sixth septennium, or forty-two years. Hence very few such men can go beyond this date without breaking down, and perhaps not to recover. Some are overtaken at an earlier age than forty, and some may go on to forty-four or forty-five, but the general proposition is as has been stated. Thus many of the most promising men in our profession die between the ages of forty and forty-five. . . . The only sure means of escape are timely rest—and it should be periodical and complete—and sufficient sleep. You are now about forty, and have not systematically commenced with either. But this danger is evidently augmented if at this time of life a change of location is made, since the needed respite will certainly not be secured, but anxiety, and labour also, will be increased in securing success in a new position. But there is still another element which will tell still more against you. I allude to your social tendencies, your facility as a speaker, and the fact that you are therefore a favourite on convivial occasions. I have no apprehension that the allurements of city life, fatal to so many, will overcome a man who very seldom, and always lightly, drinks wine and never uses tobacco; but you will often be solicited to make after-dinner and public speeches, and to give popular lectures, and to such calls you will be very likely to respond, at the expense of much extra mental labour and the risk of breaking down. You do not know, and I shall therefore tell you, how I have, as I believe, avoided the consequences which I fear for you. I found, early in my

career, that I had not the strength to attain to my own ideas of professional acquirements and standing, and also to engage habitually in extra-professional labour and excitement; that I must entirely forego convivial and to some extent even social pleasures, or forfeit to a corresponding extent what I held to be the true aims and duty of a medical man. I have therefore never, like you, acquired the reputation of being a good fellow, and have usually escaped the solicitations from that direction which you will constantly have to meet. I also, many years ago, learned that the man who energetically uses his brain for sixteen hours daily needs eight hours to repair it thoroughly, which means that he needs eight hours of normal sleep. But as this cannot be secured by a physician in practice, I have adopted the best substitute I could command, and habitually take a nap of ten or fifteen minutes immediately before dinner whenever this is possible. This habit I have considered my main safeguard against exhaustion and illness for the last twenty-five years. I have also been absent from the city on a vacation at least one month in a year. Yet, with these precautions even, I felt assured that I had made two very narrow escapes, when forty-three to forty-four years of age, and again at fifty-eight.—*E. R. Peaslee in the Boston Medical and Surgical Journal* for 27th September 1877.

MEDICAL SPECIMENS.—For rapidly preparing bones and ligaments for museum purposes, Dr L. Frederick recommends that, after the soft parts have been taken away, except the ligaments, the preparation should be washed in water, dehydrated by alcohol, and then plunged into essence of turpentine. After two or three days' maceration in this fluid, the skeleton is placed in the position in which it is designed to keep it, and dried in the air. In drying, the bones and ligaments become beautifully white, and the whiteness increases as time passes. The same process gives less satisfactory results for muscles. For a parenchymatous organ, on removing it from the turpentine Dr Frederick plunges it into melted wax or paraffin during half an hour to two hours, till the bubbles of turpentine have ceased to pass off. When withdrawn and cooled, the piece resembles a wax model, but it is far superior in its minor details; the colour of the organ persists.—*Scientific American*.

Part Fifth.

MEDICAL NEWS.

DINNER TO DR J. MATTHEWS DUNCAN.

ON Tuesday, 30th October, Dr J. Matthews Duncan was entertained to dinner in the Douglas Hotel by a number of his friends,

on the occasion of his leaving Edinburgh for London. There were about 170 gentlemen present. Dr Keiller, President of the Royal College of Physicians, occupied the chair; and the croupiers were—Professor Tait, along with Mr Benjamin Bell and Professor Crum Brown; Dr P. H. Watson, President of the Royal College of Surgeons, with Dr Handyside and the Rev. Norman Macleod; and Mr Geo. Barclay, with Professor Grainger Stewart and Mr Fasson. On the right of the chairman were—Dr Matthews Duncan, the Lord President of the Court of Session, Principal Sir Alexander Grant, Bart.; Professor Pirrie, Aberdeen; Mr Brodie, R.S.A.; Professor Gairdner, Glasgow; Professor Douglas MacLagan, Professor Balfour, Professor Spence, and Dr Myrtle. On the left of the chair were—the Lord Advocate, the Rev. Dr Macgregor, Mr Duncan M'Laren, M.P.; Prof. Sir Wyville Thomson, the Rev. Prin. Rainy, Dr Fergus, Glasgow; Dr Andrew Wood, Dr Irvine, Dr Littlejohn, Dr Leishman, and Dr John Smith. Amongst others present were—Dr Mungall, Mr Walter Berry, Mr Benjamin Bell, Mr Waller Paton, R.S.A.; Dr Malcolm, Dr Clouston, Dr Stewart Irvine, Dr Peel Ritchie, Mr John Boyd, Mr J. H. Jameson, advocate; Mr John Turnbull Smith, C.A.; Mr Francis Black, Mr Geo. Aitchison, Dr Hunter, Mr John Kay, Mr John Chiene, Dr Graham Steell, Dr Bremner, Dr Henry M. Church, Dr Moir, Professor Sanders, Dr Orphoot, Dr Montgomerie Bell, Mr W. B. Dow, Dr Sibbald, Dr R. Spence, Dr M'Gillivray, Dr A. Peddie, Dr Alex. James, Mr John M'Laren, advocate; Mr James Haldane, C.A.; Dr Underhill, Mr Francis Cadell, Mr Walker, Dr Andrew, Dr Duns-mure, Mr Smith, Dr Haldane, Rev. Francis Belcombe, Dr Finlay, Dr Thatcher, Dr Pattison, Mr John Playfair, M.B.; Dr Argyll Robertson, Captain Fraser, Dr John Wyllie, Mr John Murray, Mr William Cumming, Dr William Craig, Dr Jas. Young, Mr Thomas Strong, Dr J. Halliday Croom, Dr George W. Balfour, Mr William Jeffrey, Rev. C. Darnell, Mr Charles Duncan, Dr Robert Lucas, Dr Gillespie, Dr T. A. G. Balfour, Mr J. R. Turnbull, Mr J. Cathcart White, Dr Forbes, Mr W. A. Heard, Dr Ziegler, Dr J. J. K. Duncanson, Mr Bruce Johnston, W.S.; Mr James Matthews, Aberdeen; Dr M'Arthur, Anstruther; Dr Brown, Dr Inglis, Mr Melville Jamieson, Perth; Dr A. G. Miller, Mr A. Perigal, R.S.A.; Dr J. Livingstone, Wishaw; Dr Allen Jamieson, Dr Affleck, Dr Menzies, Dr Linton, Dr Joseph Bell, Mr Christopher Douglas, W.S.; Mr John M'Laren, advocate; Dr A. K. Simpson, Dr C. Muirhead, Dr James Carmichael, Dr Graham Weir, Dr Anderson, Dr Keith, Dr A. Smart, Mr W. B. Wardie, Dr Stevenson Macadam, Professor Turner, Dr Duncan, Dr J. Batty Tuke, Dr Niven, Mr A. W. Mackay, Mr R. F. Shaw Stewart, Mr James Gordon, M.B.; Rev. A. E. Shand, Greenock; Dr Alexander Ballantyne, &c.

The CHAIRMAN said that his first duty was to state that there were letters of apology from the following:—Sir Robert Christison,

Sir Noel Paton, Lord Shand, Professor Blackie, Dr Stevenson of St George's; Rev. Dean Montgomery, Dr Combe, Professor P. A. Simpson, of Glasgow; Professor Rutherford, Dr J. A. Smith, Dr J. G. Wilson, of Glasgow; Mr Walker, of Bowland; Mr Seton, advocate; Mr Craig, surgeon; Dr Mackie, of Inch; Dr Laurence, of Montrose; Professor Annandale, Dr Moir, Dr Renton, Dr Turnbull, of Coldstream; Dr Martine, of Haddington; Dr Angus Macdonald, Dr Laurence, of Cumnock; Provost Swan, of Kirkealdy; Mr Wylie, of Prinlaws; Dr Balfour, of Edinburgh; Professor Macpherson, Edinburgh; Dr Lungair, of Largo; Mr Ralph Dundas, W.S.; Mr W. Mackintosh, advocate. Sir Robert Christison in his letter said—"I am very sorry indeed that I cannot undertake to be one of those who are to entertain Dr Matthews Duncan at dinner on his approaching emigration to London. There is no one to whom, on many accounts, this duty is more due from me than Dr Duncan. But unfortunately, though I am very much better for two months of idleness in the Highlands, I am not so well as to indulge safely in festive indulgences and late hours. Dr Duncan is himself satisfied on that head." (Applause.) The letter of apology from Sir Noel Paton was as follows:—"I greatly regret that considerations of health, which have made it necessary for me to abstain altogether from public dinners during several years, have obliged me most reluctantly to forego the pleasure (a somewhat melancholy one) of being present at the dinner to Dr Matthews Duncan this evening. As chairman, you may probably have to mention the names of some unwilling absentees, and if so, may I beg you to do me the favour to include mine in the number? As an old friend and warm admirer of Dr Duncan, I should sincerely regret to appear to have been voluntarily absent on such an occasion." (Applause.)

The CHAIRMAN gave the usual loyal and patriotic toasts, "The Navy, Army, and Reserved Forces," being replied to respectively by Dr Pattison, Mr Fasson, and Professor MacLagan, who remarked that he had the honour of being the oldest medical officer connected with the existing volunteers in Great Britain. (Applause.)

Professor MACLAGAN then proposed, "The health of Dr Matthews Duncan." (Applause.) After some preliminary remarks, he said he would refer to the circumstance of Dr Duncan taking his degree of Master of Arts in the University of Aberdeen. Strictly speaking, that was not a part of his friend's professional career, but he held that the fact of his taking the Master of Arts degree early in life had given a tone and character to a great deal that he had done. (Applause.) He had afterwards distinguished himself at the University of Edinburgh, where he had gained the gold medal in Professor Simpson's class. (Applause.) Indeed, he gained two gold medals in one year, although the rules of the class did not permit of his holding both—(Applause)—and after graduating

at his Alma Mater at Aberdeen, he followed a course of study at foreign universities. On returning to Edinburgh he became assistant to the Professor here, and acquired a large share of practical experience during the time he resided under his roof. (Applause.) In referring to Dr Duncan's contributions to literature, he said he would in the first place characterize his writings as being distinguished by their exactness, by the precision of the information he gave, and by the logical clearness of the reasoning on points which he was arguing. He would especially point to the scientific basis on which Dr Duncan rested, and the admirable manner in which he applied his knowledge of pure science. In regard to their friend's removal from Edinburgh, they could afford to congratulate London, and especially the school with which he was more particularly to be connected. (Applause.) They wished for him all manner of success in his new sphere—(Applause)—but while they wished him success and God speed, they at the same time would much miss him here. (Applause.) The profession would miss him whom they were accustomed to look to for advice in critical emergencies—(Applause)—the Medical School of Edinburgh would miss one who had done so much to uphold its reputation by his writings and teachings—(Applause)—they would miss him in the College of Physicians, whether in full college or in council, where he always took a sage, prudent, and vital part in their deliberations—(Applause)—they would miss him in their social meetings—(Applause)—and some of them would miss him in another capacity, that of the kind and hospitable entertainer. (Applause.) While they wished for Dr Duncan all manner of success and all manner of prosperity, they added their wishes for the welfare of his wife and family. (Applause.) They wished for him a long and continued enjoyment of every blessing that could enlighten and adorn the domestic circle. (Loud Applause.) He concluded by proposing "The health of Dr Matthews Duncan." (The toast was received with loud applause.)

Dr MATTHEWS DUNCAN, who was received with loud cheers, said,—My Lords, Croupiers, and Gentlemen,—I rise to acknowledge the very great honour you have done me. The first remark that I would make in regard to it is that the circumstances of this entertainment, which you have presented me with in so complimentary a manner, are such as to enhance, in the very highest degree, the honour you have done me. (Applause.) To have my old friend Dr Keiller, belonging to the same department of the profession as myself, in the chair—(Applause)—to have as croupiers Dr Watson, Mr George Barclay, and Professor Tait—(Applause)—and to see around me such a number of my fellow-citizens, and, above all, of my beloved professional brethren, form a combination of circumstances which make this entertainment not only a great honour—the greatness of which I cannot express my feeling of—but also a delightful compliment. (Applause.) I cannot but remark on the

overwhelming nature of this entertainment, and especially upon the varied character of the gentlemen who are here present, and upon the further circumstance, that I observe that many of them have come from a very great distance—from remote quarters of England and Scotland—to give me an honour which I feel that I do not deserve. (Applause.) I think I may be allowed, considering the tenor of Dr Maclagan's speech, and especially considering the termination of it, to suppose that you do not regard merely, in giving me this entertainment, professional eminence and success. I have been fortunate enough—probably beyond my deserts—in receiving distinctions in science, but you all know that there are many things far higher and nobler than literature, philosophy, and science; and when Dr Maclagan referred to my domestic circle, he, I think, sufficiently indicated that this was not only an entertainment in token of your approval of me in some degree as a doctor, but also as a man. (Applause.) Domestic virtue, good citizenship, and, for our present purpose, good professional brotherhood, are in many respects far higher attainments than any attainments in science—than any obstrutrical attainments and success. (Applause.) On these grounds I regard the honour that is done me this evening as by far the highest that has ever been paid to me in the course of my life. (Applause.) If this is the case, how can I offer you thanks in an adequate and proper manner? I have many a time looked sympathetically on what was called the guest of the evening—the victim of the kindness of his friends—(Laughter)—but I have never been in the predicament before. (Laughter and applause.) I have repeatedly thought over the words I should select in which to express to you the deepest feelings of my heart, but I am neither a rhetorician nor a poet; and if I were so, I should completely fail. So I must resort to the ordinary phrases, and say that I cannot express my feelings on the present occasion. I thank you from the bottom of my heart. (Applause.) But I am reconciled in a great degree by the well-known circumstance that our holiest and deepest feelings are never properly expressed, or are not expressed at all; and there is on your part a great advantage over me this evening, for while I can offer you words which may appear to be very empty, but which are not, you have offered me a tangible and otherwise sensible demonstration of your approval and regard. (Applause.) You have the advantage of me, that while you offer me words and something more, I can only offer you words in return. But this tangible, sensible mark of your regard I shall always cherish. I shall cherish it exactly in the way that a lover cherishes his dearest moments—as the greatest honour that I have ever received. (Applause.) I suppose I am suffered to be a little egotistic on such an occasion as this; and I would say that we are all, to a very great extent, creatures of circumstances. Some philosophers would say that we are that, and nothing else; but, at all events, we are certainly the creatures of circumstances to a great

extent. In my case the great circumstances have been few. The chief and the first of these is good parents, Calvinistic and thrifty, devoted, above all things, to the education of their children; a first-rate grammar school, presided over by the late Dr Melvin, whom his pupils knew by the name of "Trucks"—(Laughter)—but whom they respected and admired, and whose memory they cherish; an excellent Alma Mater, Marischal College; but if there is any circumstance to which I owe what I am, it is my residence in Edinburgh. (Applause.) Already, among my fellow-citizens and my professional brethren, I have spent more than three-fifths of my life. It was impossible for a man even of the dullest sensibility and meanest capacity to spend his life in Edinburgh as I have done, enjoying the friendship, the acquaintanceship, and even the intimacy of very great men, without being powerfully influenced by them. (Applause.) In this city I have lived among, I have been educated by, and enjoyed the friendship, and sometimes the intimacy, of such mighty men in medicine as Alison, Syme, Christison, Goodsir, Simpson, many of their eminent predecessors, and of their very eminent successors. (Applause.) And I say it is impossible to live in such a sphere without receiving incalculable influences and benefits from them. During my life in Edinburgh the Medical School has flourished in an extraordinary degree—more, undoubtedly, than it has ever done before. (Applause.) It has exhibited a vitality of which I cannot give you full evidence, but I can point to some visible evidences of its vitality in the prosperity of the medical institutions in the city. Let me direct your attention to the establishment and prosperity of the Royal Edinburgh Hospital for Sick Children, to the rebuilding—at present being carried out—of the Maternity Hospital, to the rebuilding of the Royal Infirmary, to the great new building of the University Medical School, and to the great prosperity and diffusion of education in the extra-mural school. (Applause.) And if these are not sufficient evidence of the vitality, in the best sense, of medicine in Edinburgh, they are at least corroborative evidence of the very best kind. In the midst of this no man could have lived without being influenced to a very great extent; and if this were the proper time, I should have great pleasure in entering further on the greatness—the solid greatness—of the School of Medicine in this city. But this is not a proper occasion for a medical disquisition, and I may be allowed to speak of the great subject of intellectual friendships, of which medical friendships are a small but not a separate part. As there is a solidarity of the sciences, so there is a solidarity of the intellectual friendships; and I know nothing more admirable in the history of the Edinburgh School of Medicine than the way in which the friendship of the great men in the great departments of literature, philosophy, and science is extended and dispensed among the younger men of the city. (Applause.) That is done in a way which shows the

responsibility of the leaders in these departments; and I am sure that if you consider the great power of love and sympathy, and the great influence and contagiousness of zeal, you will see that it is not teaching merely that is the function of the teacher, or lecturer, or practitioner, but he has other functions which are almost if not equally great. And I am sure that the way in which these friendships have been dispensed is one of the greatest blessings in the medical profession. (Applause.) If I were to enumerate my medical friends with whom I have associated, and from whom I have derived assistance and friendship, I would never end. I must mention two who stand forth prominent—one in the early and the other in the latter part of my career. I must mention the revered name of the great companion of my scientific life—Professor M'Gillivray, Aberdeen—(Applause)—who had unequalled energy and perseverance, and those who knew him best will admit it—unrivalled powers of observation. (Applause.) I must speak very tenderly of those who are still alive, but I cannot refrain from mentioning the name of my greatest friend of later years—Professor Tait—(loud applause)—whose acuteness and profundity are known all the world over, and whose zeal is almost of an explosive quality, and altogether of a most remarkable description. (Applause.) In going to London, I feel nothing so much, beyond the domestic circle, as the loss of my intellectual friendships; for I have lived upon them, and derived more benefit from them than anything else that I have come in contact with in the course of my life. But from what I have seen of the men of St Bartholomew's Hospital, and of the other great medical men of London, I am satisfied that it will not be long before I make other friendships equally attached and useful. (Applause.) And you know that we have there, as the nucleus of such intellectual friendships, one of the finest and noblest specimens of a scientific practitioner that ever existed, Professor Lister. (Applause.) But I am not going to mislead my fellow-citizens by making them suppose that there is nothing but hard scientific work and diligent practice within the bounds of the medical profession. I can assure you that we recognise the important principle, that "all work and no play makes Jack a dull boy." (Laughter and applause.) I know nothing more excellent and useful among us than the admixture—the liberal admixture—of a great deal of mirth and of revelry that we have during our work in Edinburgh; and I am sure that all here will be ready to admit that that admixture of mirth and revelry is not merely harmless, but positively useful, and conducive to the benefit of the members of the profession. (Applause.) Indeed, I can bear testimony, without the slightest hesitation, that during all my long life of thirty years in Edinburgh, in the very heart of medicine, I have never seen the mirth and revelry excessive. I have never seen it but subordinated to the occupations of the gentlemen who partook of the fun that was going. (Applause.) Before leaving Edinburgh, and taking leave as

I virtually do of my friends and professional brethren, I would like to say a few words in regard to an humble class who are very useful to us—I mean our servitors. Many here will remember Robert Green, the Philosopher—(a laugh)—who was merely a janitor in our medical theatre in order that he might pursue the study of predestination, free-will, and so forth. (Laughter.) He was really an able man. Many more will remember the great Danny, who was a jovial character, who stayed a short time with us. He had a great ambition. His ambition was fixed by the sight of a sign-board in Infirmary Street. (Laughter.) I know nothing in Edinburgh or in the world more unpleasant or ungraceful than the sign-board I refer to. Suppose yourself a patient walking into the Infirmary, and you turn yourself as you put your foot on its threshold, you would see on the sign-board, “Coffins of every description on the shortest notice.” (Laughter.) This is the most dreadful thing I know; yet it was this very sign-board that fired his ambition, and he became a great man in that department. (Laughter.) He was extremely ambitious to bury his friends, for he was always sending to them intimations of his wares—(Laughter)—but his prosperity was his ruin, and he made his coffin in a way that many Scotchmen make their own coffins. I may also refer in a few words to a great man, Peter Bowie, who was enlisted in our service by Dr Watson. He was born and bred in a Highland regiment. He served his Queen and country in a bloodless campaign in the North of Ireland—(Laughter)—and ever since he has served the Medical School as a porter. I leave him in the hands of Dr Chiene, Dr Macdonald, and Dr Underhill, who appreciate his gallant qualities. (Applause.) I am sure that he is lurking somewhere in this room—(Laughter)—and that if I were to call his name he would soon show himself. (Laughter.) The last word I have to say is a word in favour of the pursuit of science; for though there is no place in the world where such a word is less required, yet the longer I live the more I am satisfied that it is required in Edinburgh. I may address myself especially to the younger men whom I see in large numbers here present, and I may remind them of one or two great facts in the history of medicine. It was in the end of last century that John Hunter made surgery a science, that by making surgery a science he established his own fame for ever, and in doing so he raised it from a very degraded position to a position of an equal footing with the very highest. In the words of the greatest surgeon that ever lived, John Hunter found the members of the profession in a degraded position, and he left them gentlemen. (Applause.) The same thing was done for obstetrics, but much later, by John Hunter’s brother William; but the progress of obstetrics to the position which it now holds was very slow. I remember the time when the great medical associations in this country considered it disgraceful for a medical man to dirty his hands with the work of an obstetrician,

and who declined to admit such a man within their ranks. That rule existed till within a few years ago, and it is by the scientific elevation of the science of obstetrics that the change has been wrought, and nothing else. (Applause.) This is the end of what I would say. It is science that has made obstetricians possessed of the social position that they now hold, and I may tell you that, in my own humble case, but for obstetrics I would never have received the great entertainment which you have given me. Without hard work it is impossible to obtain extensive knowledge, without extensive knowledge there can be no such thing as science, and without all available science you may have a clever physician, but not a really great one. I am sure that if the Medical School of Edinburgh is to go on, it will be through the progress of science, which every one is bound to cultivate for himself and to diffuse among others. (Applause.) I sit down thanking you as I do with all my power for the very great honour you have done me. I cannot begin to make a response for my wife, but I can say that while she will be very far from insensible of the honour that you have done her by including her in the toast, she will be far more sensible of the honour you have done me. (Applause.) And I am sure that in her case, as in mine, the entertainment of this evening, whenever we think of it, will have the same effect—the same glorious effect—as a sunbeam has on a landscape which otherwise would sometimes be a dreary landscape. (Dr Duncan resumed his seat amid loud and enthusiastic cheers.)

Mr GEORGE BARCLAY proposed “The College of Justice and the Lord President.”

THE LORD PRESIDENT, in returning thanks, said that he was always very proud to represent the College of Justice, but he had come there for the purpose of adding his testimony to that of his fellow-citizens and his fellow-countrymen—to express his admiration and esteem—for their friend, who was the guest of the evening. (Applause.) He confessed it was to him, as it might be to many others, a melancholy though a festive occasion; and he could not help joining in the expressions of regret of his friend Sir Noel Paton. (Applause.) For himself personally, he lost in Dr Duncan an acquaintance of nearly thirty years’ duration, a constant medical adviser during the whole of that period, to whom in that capacity he owed obligations that he could not describe; but he also lost in him a faithful, a warm, and judicious friend. (Loud applause.)

THE LORD ADVOCATE then proposed “The Universities of Scotland.” He said that it was unnecessary to refer to the subject of the toast at length, because in any company of educated Scotchmen it was well known that the history of these institutions was inseparably associated with all that was best in the culture and intellectual life of Scotland. (Applause.) Especially in a company like the present they could not forget that the universities had won

in the departments of medical science not the smallest part of their great reputation. (Applause.) For more than a century they had stood in the foremost ranks in the medical schools of Europe. (Applause.) In Edinburgh they had a body of professors and teachers of whom they were justly proud, but whose services their southern friends had occasionally coveted, and, he regretted to say, had been only too successful in obtaining. While they could not help regretting these losses, they could console themselves with the reflection that the prominent positions which those gentlemen who were leaving were to occupy in the metropolis reflected credit on them, and would add lustre to the Medical School and the University of Edinburgh. (Applause.) As to the four universities, he was glad to say that none of them showed the slightest signs of failure from old age. (Applause.) The best proof that they were progressing was that there was an increase year after year not only in the quality of the teaching, but in the numbers taught. (Applause.) He could only express a hope that with that progress there might be obtained towards the aiding of these institutions a small title of the endowments which had done so much for the universities in the sister country. (Applause.) He concluded by coupling the toast with the name of Sir Alexander Grant. (Applause.)

Sir ALEXANDER GRANT, in acknowledging the toast, expressed the pleasure he felt in being present. Dr Duncan was a man of true academic spirit, a man of whom any university might be proud—(Applause)—and in losing whom the University lost one of the greatest extramural teachers that she ever had. (Applause.) He was very much relieved by the very kind remarks of the Lord Advocate in regard to the universities, because his Lordship had been engaged in many counsels with his friend on the left (Mr M'Laren, M.P.) in a clinical examination of the condition of the universities. (Laughter.) It was a responsible thing to say much in the presence of those authorities who held the doom of the universities in their hands. (Laughter.) He was glad to say that all the universities of Scotland were at the present moment extremely prosperous. (Applause.) He might have that day, if he had availed himself of the privilege which for certain reasons he did not do, stated that last year there was the greatest number of students on the rolls of the University of Edinburgh since it was founded, and that the entries that were coming in for the ensuing year showed that the University was still in the confidence of the country. (Applause.)

The PRESIDENT of the Royal College of Surgeons, in proposing the next toast, "The Medical Schools of London," said,—This toast which has been confided to me to propose for the acceptance of this very large and influential gathering, is, I may say, but a corollary to the great toast of the evening. It was impossible to wish Dr Matthews Duncan God-speed in the new sphere of teaching activity upon which he was now entering, and to which he had

been called with such generous and cordial unanimity, without desiring for the great schools of London a prosperity which they had enjoyed so largely in the past, and which it was the anticipation and earnest wish of this meeting they might secure in all time coming. It might seem strange that such sentiments of good will should emanate from a school so recently robbed of one of its brightest ornaments in the person of their honoured guest, and which was essentially the strongest rival of the London school, both in the number of its pupils and in its teaching power. But, to say the truth, London was far enough separated from Edinburgh, and bulked largely enough in their mind's eye, to enable them more justly to estimate its great power, and to esteem the vast talent it contained, and to feel that any rivalry which existed could only be a generous rivalry. It would manifest itself chiefly in emulating the great names of the past and present, which had made its medical schools famous, and in providing as large a supply of well-trained teachers as might suffice for the supply of the metropolis as well as for schools elsewhere. Of the many medical schools of which the metropolis could boast, none in point of antiquity and celebrity, in the power and dignity of those who had held office within its walls, could surpass it; and in another respect they might well envy its time-earned laurels in the great men who, educated in its school and wards, had gone forth bearing with them some of the culture, the science, and the practical skill to other spheres of usefulness at home and abroad. To-night we have not amongst us any of the teaching staff of the London School, except Dr Matthews Duncan, but we have more than one honoured friend around this board, who have either actually studied in the period of their studentage within the walls of St Bartholomew, or later in life found time and inducement to supplement the lessons of earlier life by the great clinical experience which was offered by such a school. I would therefore, regarding as I do the pupils of a school as the great glory of it, and their success and the esteem in which they are held as the best token of its teaching and training, desire to couple with this toast the names of Professor Pirrie of Aberdeen and our own beloved Benjamin Bell. In such a company, more than a mere reference to their names was superfluous. Professor Pirrie was a name to conjure with in all broad Scotland, as no less learned and wise than he was sagacious and tender-hearted; and as an author, the writer of one of the best surgical treatises of the day. Of Mr Benjamin Bell need we say more than that his name was enshrined in the affections and esteem of all who knew him as no less a surgeon than a high-minded Christian gentleman? Well might St Bartholomew's flourish while she could send out even to the chilly North representatives of her training; and well might Aberdeen and Edinburgh congratulate themselves, that if St Bartholomew's could tempt a Duncan from our midst, there was something good left for Scotland yet, while we could retain a Pirrie and a Bell.

Mr BENJAMIN BELL replied as follows:—If Professor Pirrie, in returning thanks for the London Schools, had confessed to being a Bartholomew's man, I might have escaped making a speech on this occasion; but having spent three years of my early professional life at that great hospital, it is perhaps my duty also to respond to the toast, and all the more willingly that it gives me an opportunity of saying a few last kind words about our friend Matthews Duncan. I endorse all that has been said so well by the President of the College of Surgeons in wishing prosperity to these Schools in general, and to Bartholomew's in particular. We may inscribe, Sir, on the portals of that venerable institution, the names of Percival Pott, of John Abernethy, of James Earle, of William Lawrence, of John Painter Vincent, of Henry Earle, of Edward Stanley, of Peter Mere Latham, and, coming nearer our own time, of James Paget, of William Baly, whose sad end many will remember; and of two very eminent gynaecologists, Charles West and Arthur Farre. The last four were my own contemporaries, and I can recall the sure prognostics which they gave as students of their future eminence and success. Why do I mention these men? Because I mean to say—and I say it advisedly—that our friend Dr Duncan will prove a real accession of strength to Bartholomew's Hospital, fully sustaining by both his talents and his professional attainments that high reputation which has been gained for it by his distinguished predecessors. Professor MacLagan, in his able, elegant, and characteristic speech, dwelt upon many circumstances and occasions in which we shall miss the guest of this evening, when he takes his final departure from Edinburgh. Allow me to try and gather up a few more aspects of our loss which occur to me. We shall miss him on the street. His quiet, leisurely, yet steady onward walk not to be lightly interrupted; while his grave, thoughtful countenance relaxes with a friendly recognition for those whom he happens to meet. The truth is that he has an appointment, and wishes to reach his destination at a certain time. Dr Duncan is a punctual man, and you never see him in a hurry or fussed,—recalling vividly to my mind, in this important quality, two members of our profession, one of them a great physician whom some of us remember—John Abercrombie; the other, a still greater surgeon, whom most of us knew—James Syme. We shall miss our friend in the chamber of sickness. He has arrived, punctual to a minute, and comes in with a quiet step. His expression may be grave, but it indicates self-reliance, and brings hope and confidence to the patient. They say he is *reticent*. So he is; but he knows when to speak, and when to be silent. And we know that silence is golden. Some people say that his manner is dry. There is nothing certainly that can be called *gushing* about Matthews Duncan; but let me tell these people that there is a deep fountain within the man which can show itself on due occasion. The examination of the patient over, we leave the sick-room

for the consultation. I speak now for general practitioners. You feel that you have to do with a man who forms his conclusions and opinions with care and caution, and then holds them tenaciously—a man all whose professional work suggests by its solidity and durableness the granite formation of his own native Aberdeen. There is no *reticence* now. He places his own doubts and difficulties candidly before you, and never leads you to suppose that he has a store of wisdom in the background unrevealed. His opinion is unmistakably reasonable and trustworthy, again reminding you of the two reliable consultants whose names I have already mentioned. We shall miss our friend greatly as a citizen. Not that he ever took much part in local politics; but it is always a good thing to have the bull's-eye, so to speak, of a clear, shrewd, reasonable mind turned upon public affairs; and when such a man takes his departure, it is a positive loss to the community in which he moved. Dr MacLagan told us how our friend will be missed in our social gatherings. Let us cherish the expectation that once a year, at least, we shall have him in the midst of us, like the late Sir William Fergusson, who was always true to his Scottish antecedents, and was in the habit of joining the company of his old friends, as much to his own satisfaction as theirs, before returning to London at the close of his autumnal holiday. If our friend should get involved in the *maelstrom* of the great metropolis, I do not believe that his course will be materially affected by it. He will remain the same Matthews Duncan that he was in Aberdeen, the same that we knew him in Edinburgh. It seems to me that we may accommodate to him the old Roman adage:—*Cælum non animum mutant qui trans mare currunt*.

Several songs were sung, and the following verses, written for the occasion, were read by the author, Dr John Smith, and received with great laughter and applause:—

DUNCAN'S FAREWELL.

O ye wha's bairns are comin' fast,
 An' ye wha's time o' breedin's past,
 Ye wha hae got a wean at last,
 Lament an' grane,
 A freen in need has frae ye passed,
 For Duncan's gane.

Ye leddies, wha frae far an near
 Tell't him o' yer symptoms queer,
 He spak ye plainly an' sincere,
 As ye'll alloo;
 Nae mair his freenly haun' will here
 Be laid on you.

Fu' aften o' a nicht he's gane,
 An' left the mistress a' her lane,

Tae calm the nerves, or soothe the pain,
 O' some puir woman,
 Or help into this warld some wean
 He kent was comin'.

His heid was crammed wi' curious facts,
 Doonricht an' fearless were his acts,
 At quackeries he whiles wad rax
 Wi' sic a clour,
 That clyte they'd fa' upon their backs
 Amang the stoor !

Hoo mony bairns ye nicht expect,
 What times they'd come, an' a' correct,
 He'd tell. Gie him the age an' wecht
 O' the gudeman,
 The progeny, in line direct,
 Straucht aff he'd scan.

He kept the lead o' doctor chiels ;
 His fees, his instruments, an' pills,
 The very colour o' his wheels
 An' hats, they copied ;
 A grand, stieve will his life reveals,
 That naething stoppit.

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Noo that the winter's comin' fast,
 Frae callants green wha haena passed,
 Till them wha's lot's been fairly cast
 Tae kill an' slay,
 Ilk student mourns he's seen the last
 O' Duncan's day.

An' noo a verse maun be addressed,
 Inspirin' aboon a' the rest,
 A gentle thocht in ilka breast,
 Tae his sweet wife :
 Without her, what wad at the best
 Hae been his life ?

Then Fare-ye-weel wi' a' oor heart,
 We feel it lessens sorrow's smart
 Tae think ye'll shine whatever airt
 Ye seek to dwell ;
 Sae, tho' it's unco sair to part,
 Ance mair, Farewell.

OBITUARY.

Dr W. HANDSEL GRIFFITHS, of Dublin, whose admirable reports on therapeutics have for the last two years enriched our pages, died on the 16th of November of typhoid fever. A man of untiring industry and courtesy, he acted as Librarian to the College of Surgeons, lectured in chemistry, and worked incessantly at chemical and therapeutical subjects. He was hardly in his thirtieth year, but already had made a name for himself.

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